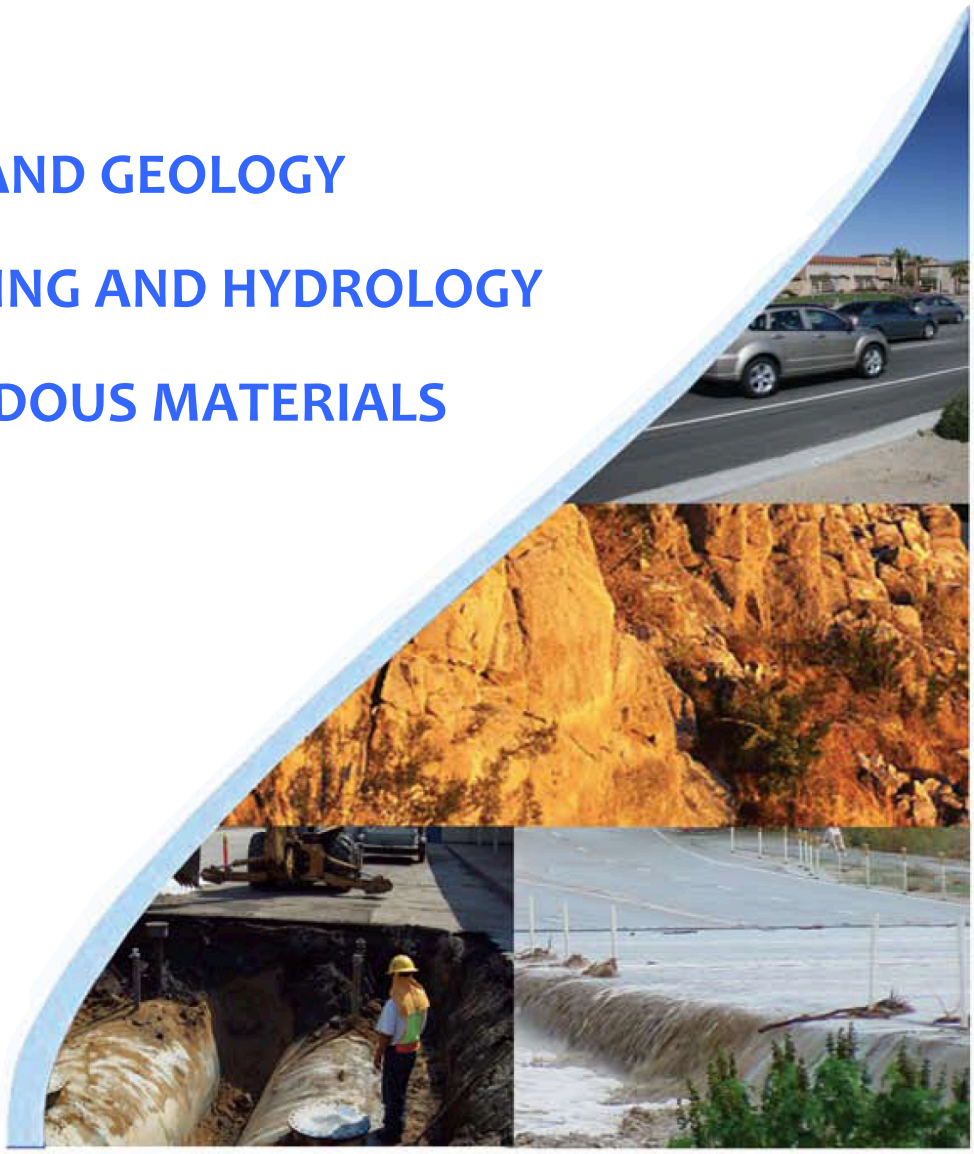
Chapter IV

ENVIRONMENTAL HAZARDS

- NOISE
- SOILS AND GEOLOGY
- FLOODING AND HYDROLOGY
- HAZARDOUS MATERIALS




La Quinta
GEM of the DESERT

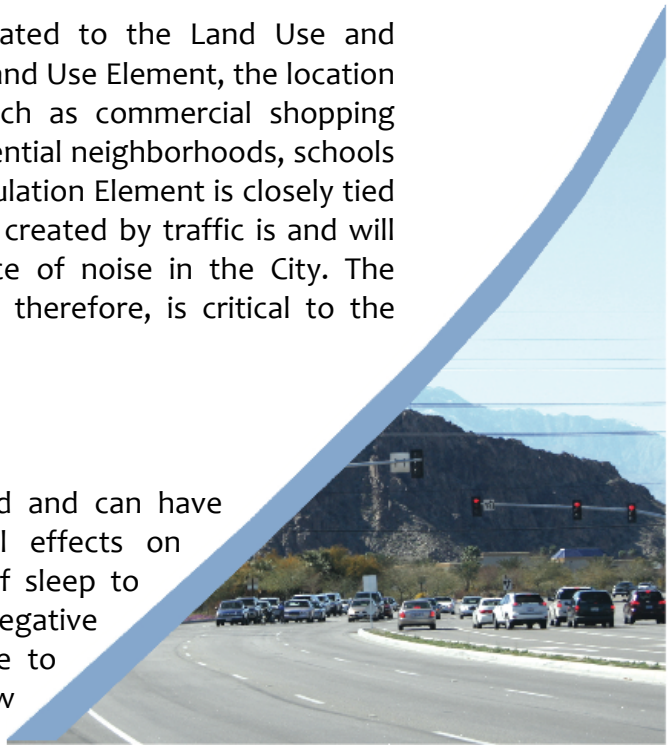
NOISE

PURPOSE

The Noise Element addresses the City's current and future noise environment. As the City and its Sphere of Influence continue to develop, additional development will generate noise from many sources, ranging from air conditioning units to automobiles. This Element identifies areas where noise levels are expected to reach unacceptable levels, and provides policies and programs which will assure that noise levels do not negatively impact the community.

Government Code Section 65032(f) requires that cities evaluate their noise environments, address the potential hazards associated with high noise levels and set standards for acceptable and unacceptable noise levels. The City is also allowed to set standards for noise under the California Environmental Quality Act (CEQA). These standards can help the City identify projects which could significantly impact noise levels, and require that the projects lower their noise levels.

The Noise Element is most closely related to the Land Use and Circulation Elements. In the case of the Land Use Element, the location of uses which create more noise – such as commercial shopping centers – can impact noise levels in residential neighborhoods, schools and other "sensitive receptors." The Circulation Element is closely tied to the Noise Element because the noise created by traffic is and will continue to be the single largest source of noise in the City. The distribution and smooth flow of traffic, therefore, is critical to the City's noise environment.



BACKGROUND

Noise is defined as an unwanted sound and can have serious physiological and psychological effects on people, ranging from the disturbance of sleep to hearing loss. In order to prevent these negative effects, a number of tools are available to cities, particularly when they consider new development proposals.

The changes in air pressure which result in sound are most often measured in decibels (dB). That measurement is further modified by the A-weighted decibel scale (dBA), which gives less weight to very low and very high sounds, consistent with the way a human ear reacts to sound. A conversation between two people measures about 60 dBA, while construction equipment can register at 110 dBA. Most people cannot identify an increase in sound of less than 3 dB, and the structure of the human ear causes us to perceive that a sound that is 10 dB higher than another is twice as loud. The chart below illustrates loudness and its subjective impact on people.

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140	INTOLERABLE OR DEAFENING	HEARING LOSS
NEAR JET ENGINE		130		
		120		
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100	VERY NOISY	
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80		SPEECH INTERFERENCE
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEEP DISTURBANCE
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		
QUIET SUBURBAN NIGHTTIME	LIBRARY	30	FAINT	NO EFFECT
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0		

The amount of noise in a community at any given time is called the ambient noise level. It consists of the total of all noise sources – traffic, birdsong, conversations and other noises – at any given time during the day.

There are two classifications of the sources of noise: line sources, which include traffic noise; and point sources, which are fixed sources such as air conditioners. Both sources can be affected by surrounding conditions. “Soft site” conditions, such as vegetation, absorb noise and reduce its potential impact. “Hard site” conditions, such as walls and buildings, can block noise but can also cause it to reverberate. In addition, distance reduces noise levels – a doubling of the distance

between a person and a noise source reduces noise by about 4.5 dBA. Soft and hard site conditions and distance are all used to determine the level of noise that reaches the human ear from the source.

Noise Sources in La Quinta

In La Quinta, traffic noise is the most common source of noise. The level of noise from traffic is directly affected by the mix of vehicles on the road – when heavy trucks make up a larger share of the traffic, traffic noise is higher than when traffic is composed entirely of automobiles. Also contributing to noise levels are commercial activities, including air compressors and commercial compactors, landscaping maintenance equipment, and daily activities.

In the Sphere of Influence, aircraft noise from operations at the Jacqueline Cochran Regional Airport can also affect the noise environment. Although not a heavily used airport, takeoff and landing operations can impact the residential land uses in the Sphere.

As the City and the Sphere of Influence areas build out, and traffic levels increase, ambient noise levels can also be expected to go up. Careful planning is required to assure that residents are not negatively affected.

Noise Sensitivity

The term "sensitive receptor" is used to identify land uses which are more impacted by noise than others. They include residential uses, schools and libraries, hospitals and nursing homes. Moderately sensitive uses include parks and golf courses, hotels and motels. The location of uses which are sensitive to noise in relation to noise generators, such as shopping centers and airports, must be considered in the Land Use Map.

Community Noise Equivalent Level (CNEL)

California Health and Safety Code Section 46026 establishes standards for local noise ordinances to help identify appropriate noise levels for various land uses. It uses the Community Noise Equivalent Level (CNEL), which averages noise levels over a 24-hour period. The CNEL scale is weighted to recognize that noise is more evident during the more quiet evening and nighttime periods. Because the ambient noise level is lower in the evening and at night, sounds appear to be louder.

The CNEL scale has been used to develop acceptable ranges of noise for a broad range of land uses, ranging from single-family homes to industrial uses. Acceptable noise levels under this model increase as

the sensitivity of the land use decreases, so that louder noise environments are considered acceptable at shopping centers, and more quiet noise environments are required for hotels.

Existing Noise Levels

The primary source of noise in the City and Sphere is traffic. In order to determine noise levels throughout the City and Sphere, a noise analysis was conducted for this General Plan (it is included in its entirety in the Appendix of the General Plan EIR). This analysis includes the monitoring of noise levels at 20 locations. **Table IV-1** shows the results of 24-hour monitoring at seven locations, while **Table IV-2** shows the current short-term noise levels at 13 additional locations.

Table IV-1
Existing 24-Hour Noise Levels at Monitored Locations

Receptor Location	Description	Time Of Measure-ment	Primary Noise Source	Hourly Noise Levels (Leq dBA)	Daily Noise Levels (dBA CNEL)
L1	Located north of Westward Ho Drive at La Quinta Park across from the La Quinta High School baseball fields.	February 2-3, 2011	Traffic on Westward Ho Drive, Park Activities, Activities at La Quinta High School	44.9 - 63.6	60.2
L2	Located north of Highway 111 on southern portion of the commercial center west of La Quinta Drive.	February 2-3, 2011	Traffic on Highway 111	50.4 - 64.1	65.3
L3	Located near the Washington St. and Via Marquessa intersection adjacent to the existing medical offices.	February 2-3, 2011	Traffic on Washington Street	58.1 - 71.6	72.7
L4	Located north of the Coachella Drive and Eisenhower Drive intersection at the Legacy Villas of La Quinta.	February 2-3, 2011	Traffic on Eisnhower Drive, Ambient	47.6 - 56.1	59.3
L5	Located next to the Crab Pot Restaurant on Avenida La Fonda in "The Village".	February 2-3, 2011	Traffic on Ave. La Fonda, Ambient within "The Village"	43.1 - 65.4	58.9
L6	Located northeast of the 52nd Avenue and Jefferson Street intersection at land uses proposed as multi-family residential.	February 2-3, 2011	Traffic on 52nd Ave. and Jefferson St.	48.7 - 60.3	62.2
L7	Located on the northeast corner of the intersection of Jackson Street and 50th Avenue near the existing single-family homes.	February 2-3, 2011	Traffic on Jackson St.	52.6 - 72.6	71.4

The noisiest locations monitored for a 24-hour period are on Washington Street in the City and Jackson Street in the Sphere of Influence. These noise levels can be attributed to vehicular traffic on

Washington and Jackson Streets. The Daily Noise Level represents the average noise level occurring throughout the entire day. The Hourly Noise Level represents noise levels measured during one particular hour. In some cases, the hour measured may have been affected by an unusually loud event (heavy trucks passing by) or temporarily noisy condition (rush hour). Where this occurs, the Hourly Noise Level can exceed the Daily Noise Level.

Table IV-2 below, illustrates the existing noise levels monitored for 10 minutes at each location. The table shows that the noisiest locations are on major roadways in the City.

Table IV-2
Existing Short-Term Noise Levels

Receptor Location	Description	Time Of Measure-ment	Primary Noise Source	Noise Levels (Leq dBA)	Noise Levels (dBA CNEL)
S1	Located 100 feet from the Washington Street centerline north of the Fred Waring Drive intersection.	3:00 p.m.	Traffic on Washington Street	66.1	68.4
S2	Located near the Jefferson Street and Fred Waring Drive intersection at an existing Walgreens.	3:17 p.m.	Traffic on Jefferson St. and Fred Waring Dr.	69.3	72.9
S3	Located near the Eisenhower Health center east of the Washington Street centerline.	3:43 p.m.	Traffic on Washington Street	69.3	71.6
S4	Located near the La Quinta Unified School District Offices at the intersection of 48th Avenue and Dune Palms Road.	4:11 p.m.	Traffic on Avenue 48	66.5	67.1
S5	Located approximately 100 feet east of the Jefferson Street centerline north of the 50th Avenue intersection at the existing commercial center.	10:27 a.m.	Traffic on Jefferson St.	64.3	68.0
S6	Located 50 feet east of the centerline in the front yard of 51915 Avenue Bermudas across from the community park south of the 52nd Avenue intersection.	11:12 a.m.	Traffic on Avenue Bermudas	66.2	71.3

Table IV-2 (cont'd)
Existing Short-Term Noise Levels

Receptor Location	Description	Time Of Measure-ment	Primary Noise Source	Noise Levels (Leq dBA)	Noise Levels (dBA CNEL)
S7	Located south of 52nd Avenue at the Cahuilla Desert Academy School.	11:55 a.m.	Traffic on 52nd Avenue	62.0	66.6
S8	Located adjacent to the single-family homes near the intersection of Avenue Bermudas and Calle Arroba.	11:29 a.m.	Traffic on Avenue Bermudas	59.2	64.3
S9	Located east of Madison Street at the Troon Way intersection near the existing single-family homes.	1:10 p.m.	Traffic on Madison Street	64.4	67.5
S10	Located 100 feet west of the Harrison Street centerline south of the Airport Blvd. intersection.	12:16 p.m.	Traffic on Harrison Street	62.1	65.7
S11	Located north of 50th Avenue centerline at the existing Boy and Girls Club.	10:46 a.m.	Traffic on 50th Avenue	57.7	61.5
S12	Located 50 feet east of the Monroe Street centerline south of the 60th Avenue intersection and the existing residential uses.	12:40 p.m.	Traffic on Monroe Street	60.4	64.0
S13	Located 100 feet west of the Jefferson Street centerline between 52nd and 54th Avenue at the proposed residential uses.	1:30 p.m.	Traffic on Jefferson Street	66.7	71.0

Table IV-3
Land Use Compatibility for Community Noise Environments

Land Uses	CNEL (dBA)						
	50	55	60	65	70	75	80
Residential - Single Family Dwellings, Duplex, Mobile Homes	A	B			C	D	
Residential – Multiple Family	A	A	B		C	D	
Transient Lodging: Hotels and Motels	A	A	B		C	C	D
School Classrooms, Libraries, Churches, Hospitals, Nursing Homes and Convalescent Hospitals	A	A	B		C	C	D
Auditoriums, Concert Halls, Amphitheaters	B	B	B	C	C	C	C
Sports Arenas, Outdoor Spectator Sports	B	B	B	B	B	C	C
Playgrounds, Neighborhood Parks	A	A	A	A	C	D	D
Golf Courses, Riding Stables, Water Recreation, Cemeteries	A	A	A	A	C	C	D
Office Buildings, Business, Commercial and Professional	A	A	A	A	B	D	D
Industrial, Manufacturing, Utilities, Agriculture	A	A	A	A	B	D	D

Source: *California Department of Health Services, "Guidelines for the Preparation and Content of the Noise Element of the General Plan," 1990*

A — Normally Acceptable: With no special noise reduction requirements assuming standard construction.

B — Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design

C — **Normally Unacceptable**: New construction is discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

D — **Clearly Unacceptable**: New construction or development should generally not be undertaken.

La Quinta Municipal Code

Section 9.100.210 of the City's Municipal Code governs noise control in the City. The current noise standards allow noise levels of 60 dBA from 7 AM to 10 PM, and 50 dBA from 10 PM to 7 AM for noise sensitive uses; and 75 dBA from 7 AM to 10 PM, and 65 dBA from 10 PM to 7 AM for nonresidential land uses. This standard is more stringent than the CNEL standard and can be modified by City Council.

The Ordinance also addresses short-term noise levels and places restrictions on the length of time unacceptable noise levels can be maintained. It also addresses temporary noise levels, such as construction noise, and restricts the hours when such noise can occur to the less sensitive daytime hours.

Anticipated Future Noise Levels

The Noise Impact Analysis predicts noise levels throughout the City and the Sphere of Influence at build out of the General Plan. These are shown in Table IV-4, below, and addressed in greater detail in the General Plan EIR.

Table IV-4
Build Out Noise Levels

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Washington St.	n/o Fred Waring Dr.	72.7	152	327	705	1,519
Washington St.	btwn Fred Waring & Miles	73.3	165	356	766	1,650
Washington St.	btwn Miles & Hwy 111	72.5	148	318	685	1,476
Washington St.	btwn Hwy 111 & Avenue 48	73.0	158	341	736	1,585
Washington St.	btwn Avenue 48 & Eisenhower Dr	72.3	142	306	658	1,418
Washington St.	btwn Eisenhower Dr & Avenue 50	71.7	129	278	599	1,290
Washington St.	btwn Avenue 50 & Calle Tampico	70.9	115	248	534	1,150
Eisenhower Dr.	btwn Washington St & Avenue 50	68.1	74	160	346	745
Eisenhower Dr.	btwn Avenue 50 & Calle Tampico	66.6	59	128	275	593
Avenida Bermudas	btwn Calle Tampico & Avenue 52	59.1	RW	RW	87	188
Avenida Bermudas	btwn Avenue 52 & Calle Durango	63.6	RW	80	173	372
Adams St.	btwn Westward Ho Dr & Hwy 111	66.6	60	129	277	597

Table IV-4 (cont'd)
Build Out Noise Levels

			Distance to Contour (Feet)			
Road	Segment	CNEL at 100 Feet (dBA	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Adams St.	btwn Hwy 111 & Avenue 48	66.8	61	132	284	613
Dune Palms Rd.	btwn Westward Ho Dr & Hwy 111	65.5	50	108	232	500
Dune Palms Rd.	btwn Hwy 111 & Avenue 48	66.7	60	129	278	598
Jefferson St.	n/o Fred Waring	70.4	107	230	496	1,068
Jefferson St.	btwn Fred Waring & Miles	71.8	132	284	613	1,320
Jefferson St.	btwn Miles & Westward Ho Dr	72.2	141	304	654	1,409
Jefferson St.	btwn Westward Ho Dr & Hwy 111	72.2	140	302	651	1,402
Jefferson St.	btwn Hwy 111 & Avenue 48	72.1	139	299	645	1,389
Jefferson St.	btwn Avenue 48 & Avenue 50	72.7	151	326	702	1,513
Jefferson St.	btwn Avenue 50 & Avenue 52	71.1	119	256	551	1,186
Jefferson St.	btwn Avenue 52 & Avenue 54	70.7	111	239	516	1,112
Madison St.	btwn Avenue 50 & Avenue 52	70.4	107	231	497	1,071
Madison St.	btwn Avenue 54 & Airport Blvd	72.0	136	292	629	1,355
Madison St.	btwn Airport Blvd & Avenue 58	70.8	113	244	527	1,134
Madison St.	btwn Avenue 58 & Avenue 60	68.2	76	164	354	762
Monroe St.	btwn Avenue 52 & Avenue 54	70.4	106	228	492	1,060
Monroe St.	btwn Avenue 54 & Airport Blvd	70.6	110	237	510	1,099
Jackson St.	btwn Avenue 54 & Airport Blvd	70.0	101	217	467	1,006
Jackson St.	btwn Airport Blvd & Avenue 58	70.2	103	221	476	1,026
Jackson St.	btwn Avenue 58 & Avenue 60	69.5	93	199	429	925
Jackson St.	btwn Avenue 60 & Avenue 62	68.3	77	166	358	770
Van Buren St.	btwn Avenue 52 & Avenue 54	70.0	101	217	467	1,006
Van Buren St.	btwn Avenue 54 & Airport Blvd	69.0	86	185	399	859
Van Buren St.	btwn Airport Blvd & Avenue 58	69.3	90	195	419	904
Van Buren St.	btwn Avenue 58 & Avenue 60	69.4	91	196	422	908
Van Buren St.	btwn Avenue 60 & Avenue 62	65.8	52	113	243	523
Harrison St.	btwn Airport Blvd & Avenue 58	73.7	176	378	815	1,756
Avenue 44	e/o Washington St	72.0	136	292	629	1,356
Miles Ave.	e/o Washington St	66.6	59	127	274	590
Hwy 111	e/o Washington St	75.4	230	496	1,068	2,301
Hwy 111	e/o Adams St	74.2	191	411	885	1,906

Table IV-4 (cont'd)
Build Out Noise Levels

			Distance to Contour (Feet)			
Road	**Segment**	**CNEL at 100 Feet (dBA**	**70 dBA CNEL**	**65 dBA CNEL**	**60 dBA CNEL**	**55 dBA CNEL**
Hwy 111	e/o Dune Palms	75.2	223	481	1,036	2,233
Avenue 48	e/o Washington St	67.0	64	137	295	635
Avenue 48	w/o Jefferson St	70.0	100	215	464	999
Avenue 50	e/o Washington St	64.4	RW	91	197	424
Avenue 50	w/o Jefferson St	67.0	63	136	294	634
Avenue 50	e/o Jefferson St	69.7	96	207	447	962
Calle Tampico	btwn Eisenhower Dr & Avenida Bermudas	61.9	RW	62	134	289
Calle Tampico	btwn Avenida Bermudas & Washington St	64.7	RW	95	204	440
Avenue 52	w/o Washington St	66.7	60	130	280	603
Avenue 52	w/o Jefferson St	70.1	102	220	475	1,023
Avenue 52	e/o Jefferson St	69.7	95	206	443	955
Avenue 52	e/o Madison St	69.2	88	190	410	883
Avenue 54	e/o Jefferson St	69.9	98	212	457	984
Avenue 54	w/o Madison St	62.4	RW	67	145	312
Airport Blvd.	e/o Madison St	67.3	66	141	304	656
Avenue 58	w/o Monroe St	63.8	RW	83	179	386
Avenue 58	e/o Monroe St	66.0	54	117	252	542
Avenue 60	e/o Madison St	64.9	46	99	213	460
Avenue 60	e/o Monroe St	65.3	RW	105	226	488
Avenue 62	btwn Madison St & Monroe St	64.3	42	90	195	419
Avenue 62	e/o Monroe St	67.5	68	146	314	677
Avenue 62	e/o Jackson St	63.7	RW	82	178	383
Avenue 62	e/o Van Buren St	60.1	RW	47	102	220

Most new residential development on General Plan roads will be located between 35 and 65 feet from the center line of the street (depending on the type of road on which the project is located). Based on Table IV-4, in order to achieve a noise level of 65 dBA CNEL or less, noise analysis will be required at most locations to assure that a project's design includes noise protection.

Managing Noise Levels

Site planning and design standards, including the use of buffer zones, building orientation, walls, and landscaping between sensitive land uses and roadways are the most common and easiest ways to lessen noise levels. As new noise-sensitive projects are developed next to noisy roads throughout the City, noise impact analyses should be part of the approval process to assure that the noise environment within the projects is acceptable. These analyses will be individually tailored to address each site and will provide noise attenuation best suited to the particular situation faced by each project. Such analysis is critical to assuring good quality of life for City residents.

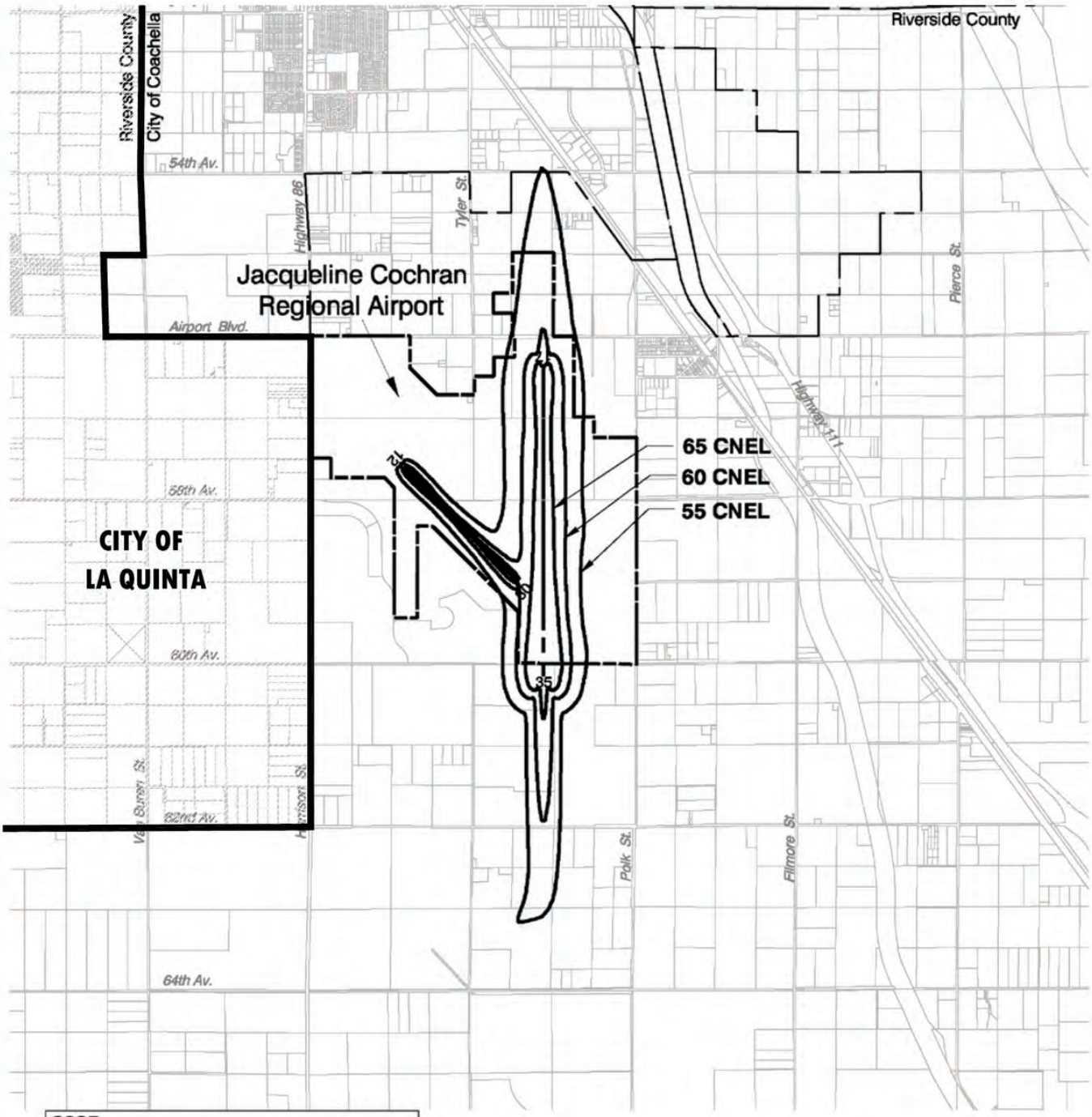
The most effective way to reduce noise is by installing a solid barrier; however, noise barriers can have limitations. To reduce noise levels by 5 dBA, a vegetative barrier must be at least 15 feet high, 100 feet wide, and dense enough to completely obstruct the line-of-sight between the noise source and receiver. For a block wall to effectively decrease traffic noise levels by 5 dB, it must be high and long enough to block the view of the road.

Construction Noise

Most construction projects require the use of heavy equipment. Heavy equipment can generate noise ranging from 68 dBA to over 100 dBA at a distance of 50 feet. For every doubling of distance, the noise level is reduced by about 6 dBA. Heavy equipment operating close to existing sensitive receptors, however, can create unacceptable noise levels for short periods of time. The City has adopted a noise ordinance which limits construction activities in order to reduce the potential for intrusive noise during evenings, weekends and holidays. Future development proposals should be required to analyze construction noise if the project is proposed next to existing sensitive receptors.

Airport Noise

The Jacqueline Cochran Regional Airport is located immediately east of the Sphere of Influence and accommodates business and private air traffic. In the future, it is likely that activity at the airport will increase. One of the airport's runways is constructed on a north-south axis, which results in the bulk of the noise occurring north and south of the runway, as shown in Exhibit IV-1. The other runway lies on a northwest-southeast axis, and noise contours along this runway are limited to the immediate vicinity of the runway. The airport's noise levels are, therefore, not expected to impact areas west of Harrison Street, which defines the eastern edge of the City's Sphere of Influence.



Source: Jacqueline Cochran Regional Airport Master Plan (September 2004)

Sources: City of La Quinta General Plan Noise Element Update Technical Report, Urban Crossroads, June 3, 2011.

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City of La Quinta General Plan
Airport Noise Contours
La Quinta, California

La Quinta 2035 GENERAL PLAN

Exhibit IV-1

Bus Stops and Bus Routes

SunLine Transit Agency operates bus routes in the City. The current routes are focused on Highway 111 and Washington Street, and they connect to other routes which provide for regional travel throughout the Valley. As the City and the region grow, demand for transit service will increase, and SunLine is likely to expand its services in the City.

Transit buses can have a negative noise impact – their brakes and engines can be louder than typical car noise, and their acceleration from bus stops can be noisy if the stop is located next to residential development. As additional bus routes are developed, and sensitive uses are proposed next to bus routes, noise analysis will be needed to assure that transit activities do no raise noise levels beyond the City's standards.

Truck Routes

The City limits truck routes by maintaining an official truck route map. Although the map is updated periodically, it generally limits truck routes to major roadways. Although heavy trucks occasionally use local streets to access delivery addresses, their presence on major roadways does not significantly change the existing or future noise environment. As with bus routes, the City will need to monitor future development of sensitive receptors on major roadways to assure that truck noise does not raise noise levels beyond the City's standards.

Groundborne Vibration

Groundborne vibration most commonly results from construction equipment, train trips and heavy truck traffic. Unlike noise, there is no established standard to measure vibration. Most groundborne vibration in La Quinta is from construction activity and heavy trucks, since there are no train tracks in the City or its Sphere of Influence. In the long term, it is not expected that additional sources of vibration will develop in the City. Construction equipment and heavy trucks can cause limited and short-duration vibrations; however, groundborne vibration is not expected to affect the City significantly.

PLANNING FOR THE FUTURE

In general, the City's current land use patterns buffer sensitive land uses from high noise levels. However, as the City and Sphere grow in the future, noise impacts will need to be carefully considered. This is particularly true of any area where Mixed Use development is considered – along Highway 111 or in the Village – where there may be

less room to buffer residential uses from commercial activities. Careful consideration of each future project will be required to assure that compatibility is maintained.

The City's ongoing efforts to preserve the quality of life for all its residents, present and future, must include the protection of a quiet noise environment.

GOALS, POLICIES AND PROGRAMS

GOAL N-1

A healthful noise environment which complements the City's residential and resort character.

❖ Policy N-1.1

Noise standards in the City shall be consistent with the Community Noise and Land Use Compatibility scale described in this Element.

- *Program N-1.1.a:* Propose to City Council an amendment to the Municipal Code (Section 9.100.210) to allow 65 dBA CNEL for sensitive land uses.

- *Program N-1.1.b:* Ensure that City Building Code standards include interior noise level standards that are consistent with the Community Noise and Land Use Compatibility scale.

❖ Policy N-1.2

New residential development located adjacent to any roadway identified in Table IV-4 as having a build out noise level in excess of 65 dBA shall continue to be required to submit a noise impact analysis in conjunction with the first Planning Department application, which demonstrates compliance with the City's noise standards.

❖ Policy N-1.3

New non-residential development located adjacent to existing residential development, sensitive receptors or residentially designated land, shall be required to submit a noise impact analysis in conjunction with the first Planning Department application, which demonstrates that it will not significantly impact the adjacent residential development or residential land.

Program N-1.3.a: Provide accommodation for special events in the public interest, such as concerts and festivals, which may temporarily exceed the maximum allowable decibel level.

❖ Policy N-1.4

All Mixed Use projects shall be required to submit a noise impact analysis in conjunction with the first Planning Department application, which demonstrates compliance with the City's noise standards.

❖ Policy N-1.5

All noise impact analysis will include, at a minimum, short-term construction noise and noise generated by the daily operation of the project at build out.

❖ Policy N-1.6

The City may require remedial noise control plans and/or improvements for areas experiencing noise in excess of adopted City standards.

- *Program N-1.6.a:* Remedial improvements will be included in the Capital Improvement Program.

❖ Policy N-1.7

Noise impact analysis shall be included in all City Capital Improvement Plan (CIP) and developer-required roadway widening projects to demonstrate compliance with City noise standards.

❖ Policy N-1.8

Maintain a truck route plan restricting truck travel to arterial roadways.

RELATED GOALS

As described above, this Element relates to others in this General Plan. The following Goals and their associated policies and programs are closely related to those of this Element.

GOAL LU-1: Land use compatibility throughout the City.

GOAL LU-3: Safe and identifiable neighborhoods that provide a sense of place.

GOAL OS-2: Good stewardship of natural open space and preservation of open space areas.

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La Quinta
GEM of the DESERT

SOILS AND GEOLOGY

PURPOSE

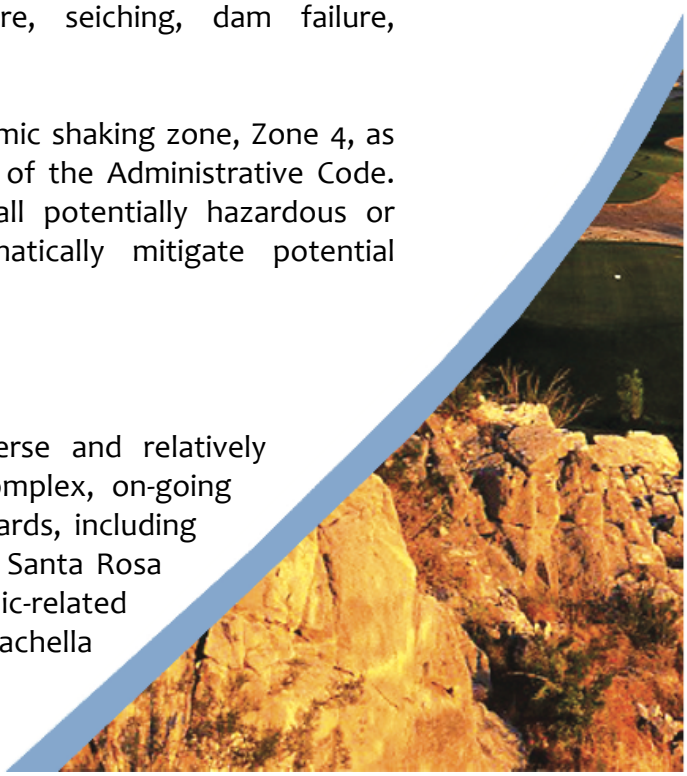
The Soils and Geology Element assesses the physical characteristics of the planning area and the community's overall safety. This element relates to a variety of other General Plan elements, including Land Use, Circulation, Housing, Economic Development, Public Facilities, Emergency Services, and Water, Sewer and Other Public Utilities. Many of the issues addressed in this element also directly relate to those considered in the Flooding and Hydrology Element.

California Government Code and Public Resources Code require the inclusion of a General Plan element addressing seismic safety issues. As set forth in Government Code Section 65302(g), the General Plan is required to consider the need to protect the community from unreasonable risks from seismically induced hazards, including surface rupture, groundshaking, ground failure, seiching, dam failure, subsidence, and other geologic risks.

The City lies within the most severe seismic shaking zone, Zone 4, as defined in Chapter 2-23, Part 2, Title 24 of the Administrative Code. Jurisdictions in Zone 4 must identify all potentially hazardous or substandard buildings, and programmatically mitigate potential hazards associated with such structures.

BACKGROUND

Geologically, the planning area is diverse and relatively young. It is subject to a variety of complex, on-going geologic and seismic processes and hazards, including continuing uplift of the San Jacinto and Santa Rosa Mountains to the west, and seismic-related subsidence (gradual settling) of the Coachella Valley.



The following discussions summarize the soil types and conditions, and associated geotechnical and seismic hazards that should be considered in future planning for La Quinta. This discussion is intended to provide an overview; additional technical information and specific mitigation measures are provided in the Environmental Impact Report for this General Plan.

Seismic Hazards

Most of Southern California is located at the boundary between the North American and Pacific tectonic plates, which are moving past each other at varying rates. The boundary between these two plates is marked by the San Andreas Fault, which occurs approximately 4 miles north of the City. Approximately 60 to 70 percent of the plate movement occurs along the San Andreas Fault. The remainder is distributed among other faults within the San Andreas system and those associated with the Eastern California Shear Zone. The southern California region and the planning area are, therefore, in an area susceptible to strong seismic activity.

Measuring Seismic Events

The seismic energy released when an earthquake occurs is measured in terms of intensity and magnitude. The intensity of ground shaking is determined by several factors, including the earthquake's magnitude, distance from the epicenter, and soil and rock composition. Seismologists have used a variety of scales to measure earthquakes.

- Modern Mercalli Intensity (MMI) scale is the most common measure of seismic intensity. It defines earthquakes in terms of damage along a continuum of 12 levels, based on observable damage to structures and human responses to earthquakes.

- Seismic Moment (M_w) Measure is currently favored by seismologists, and correlates earthquake size to the amount of energy released when a fault ruptures. A one-point increase in magnitude represents a 32-fold increase in energy.

- Maximum Probable Earthquake (MPE) is the largest earthquake likely to occur on a fault or fault segment within a specified time period. MPE is used to prepare engineering or emergency plans, to develop design parameters and safe construction practices, and to prepare policies and programs regarding potential earthquake hazards and impacts.

- Maximum Magnitude Earthquake (M_{max}) is a value assigned by the California Geological Survey which represents the highest magnitude earthquake a fault is capable of producing based on physical limitations, such as the length of the fault or segment.

Major Faults Affecting the Planning Area

Potential hazards associated with earthquakes can range from significant property damage, to the loss of public services and facilities, to the loss of life. Strong ground shaking has the greatest potential to result in severe impacts in La Quinta. Ground shaking may cause other hazards such as landslides, structural damage or destruction, liquefaction, and settlement. Such events can also result in fires, hazardous materials releases, and disruption of essential facilities and services such as water, sewer, gas, electric, drainage, and transportation. Flooding can result from dam or water tank failure.

The most significant faults with the potential to affect the General Plan area are described below and illustrated in **Exhibit IV-2**.

San Andreas Fault Zone: considered the "Master Fault" in Southern California based on frequency and magnitude of earthquakes and influence over seismic hazards in the area.

- Passes approximately 4 miles northwest of the General Plan area.
- Extends approximately 690 miles, from the Salton Sea to Cape Mendocino in northern California.
- Last major earthquake on the southern portion: Fort Tejon (1857), magnitude 8.0; the largest earthquake reported in California.
- Southern San Andreas fault estimated to have a 59% probability of causing an earthquake of at least magnitude 6.7 in the next 30 years.
- Maximum Magnitude Earthquake (M_{max}) potential in La Quinta: 7.7 to 8.0 earthquake.
- Shaking intensity could range from moderate to strong and would be expected to result in moderate to heavy damage, especially to buildings that are older or poorly constructed.

San Jacinto Fault Zone: historically, the San Jacinto fault has produced more large earthquakes than any other fault in southern California. None have been as large as the 1857 and 1906 earthquakes on the San Andreas fault.

- Located south of the planning area.
- Comprises the western margin of the San Jacinto Mountains via a series of closely spaced faults.
- Extends approximately 175 miles, intersecting with the San Andreas fault in San Bernardino; continues south of the U.S./Mexico border as the Imperial fault.
- Most recent surface-rupturing earthquakes occurred in 1968 along the Coyote Creek segment and in 1987 along the Superstition Hills segment.
- All segments of the San Jacinto fault have an average of 31% probability of rupturing between 1994 and 2024.

Burnt Mountain Fault: one of several of the other Eastern Mojave Shear Zone faults. Unknown until 1992, when a ground-surface rupture occurred along a 3.1-mile-length of this fault (most likely during a large aftershock of the Landers earthquake).

- Extends approximately 13 miles.
- Approximately 15 miles north of La Quinta at nearest point.
- Considered capable of producing a magnitude 6.0 to 6.5 earthquake.

Elsinore Fault Zone: major right-lateral strike-slip fault of the San Andreas fault system in southern California.

- Extends approximately 190 miles, from northern Baja California to the Los Angeles Basin.
- Divided, from south to north into seven segments.
- Closest Elsinore segment to La Quinta, approximately 39 miles west of La Quinta.
- Probability of rupturing in a magnitude 6.7 earthquake in the next 30 years approximately 11%.

NOTES:

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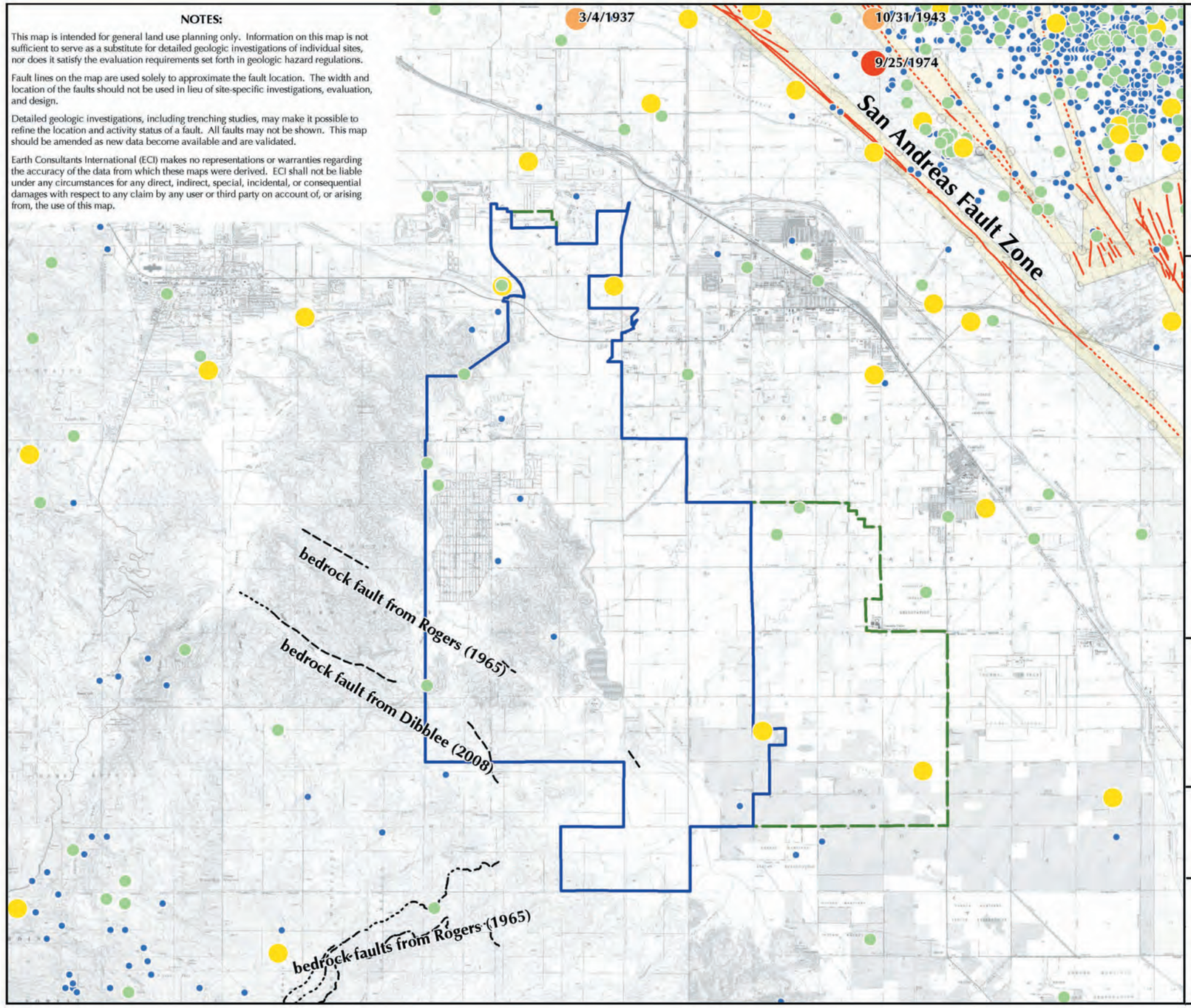

Legend

Faults and Historical (1800-2010) Seismicity Map

Explanation

Earthquake Magnitude

- 5 to 6
- 4 to 5
- 3 to 4
- 2 to 3
- <2

- Active Fault; solid where well located, dashed where approximately located, dotted where concealed or inferred.
- Bedrock (not active) Fault; dashed where approximately located, dotted where concealed or inferred.
- Alquist-Priolo Earthquake Fault Zone; boundaries delineated as straight-line segments that connect encircled turning points. From CGS, 2002.
- La Quinta City Boundary
- La Quinta Sphere of Influence

N, W, E, S

8000 0 8000 Feet

2000 0 2000 Meters

Scale: 1:96,000

Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997.
Sources: Southern California Earthquake Center (January 1932 to April 2010); National Earthquake Information Center (1800 to 1931); Alquist-Priolo Earthquake Fault Zones [Reproduced with permission CGS CD-ROM 2001-05 (2002)]; Rogers, 1965; Matti and others, 1983; and Dibblee, 2008.

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Seismically Induced Geotechnical Hazards

Seismically Induced Ground Shaking

Seismically induced ground shaking is the most potentially significant geotechnical hazard to the La Quinta area. As discussed above, large earthquakes along regional faults, including the San Andreas and San Jacinto fault zones, have the potential to generate moderate to severe ground shaking in the planning area.

Factors that determine the effects of ground motion and the degree of structural damage that may occur include:

- Intensity of the earthquake.
- Distance between epicenter and site.
- Soil and bedrock composition.
- Depth to groundwater.
- Presence of ridge tops (may result in higher localized accelerations).
- Building design and other criteria.

Local agencies use a variety of tools to assure seismic safety in structures, including the California Building Code and Unreinforced Masonry Law. These are further discussed under Mitigation of Earthquake Hazards, below.

Liquefaction

Liquefaction occurs when ground shaking of relatively long duration and intensity over 0.2 g occurs in areas of loose, unconsolidated soils with relatively shallow groundwater depths (50 feet or less). The sudden increase in water pressure in pores between soil grains may substantially decrease soil shear strength. This creates a condition where soil takes on the qualities of a liquid or a semi-viscous substance.

Liquefaction can result in ground settlement, ground undulation, lateral spreading or displacement, and flow failures. Structures may sink or tilt as bearing capacity decreases, causing substantial damage.

Areas where both shallow groundwater and soils that are susceptible to liquefaction occur include the southeastern part of the city and the entire eastern Sphere of Influence area. Liquefaction potential in this area ranges from moderate, where groundwater is 30 to 50 feet below the surface, to high, where groundwater is found 30 feet or less below the surface. Exhibit IV-3, Seismic Hazards, shows areas of liquefaction susceptibility in the planning area.

Landslides and Rockfall

Landslides and rockfall can occur when unstable slope conditions are worsened by strong ground motion caused by seismic events. Conditions that lead to landslide vulnerability include high seismic potential; rapid uplift and erosion that creates steep slopes and deeply incised canyons; folded and highly fractured rock; and rock with silt or clay layers that are inherently weak. Rockfall and rockslides are also common on very steep slopes.

Landslides have been recorded after periods of heavy rainfall, and rockfall has been associated with slope failure during drier periods.

Areas where development is located below hillsides, mountain slopes and steep canyon walls are considered most susceptible to rockfall. This includes much of the Cove and the southwestern edge of the City, which is surrounded by mountains comprised of granitic rock.

Exhibit IV-3, Seismic Hazards, illustrates where the highest potential exists for slope instability.

Seismically Induced Settlement

Seismically induced settlement can occur when strong ground shaking causes soils to become more tightly packed, collapsing pore spaces, and reducing the soil column thickness. Soils that are loose and unconsolidated, as is typical of young alluvial and wind-deposited soils, are especially subject to this risk. Fill may also be susceptible if not properly compacted during construction.

Areas where these soils (mapping units Qa, Qa/Ql and Qs) predominate are shown on Exhibit IV-4, Geologic Map, and include much of the valley floor throughout the northern Sphere of Influence, the urban core of the City, and the eastern corporate limits and Sphere-of-Influence.

NOTES:

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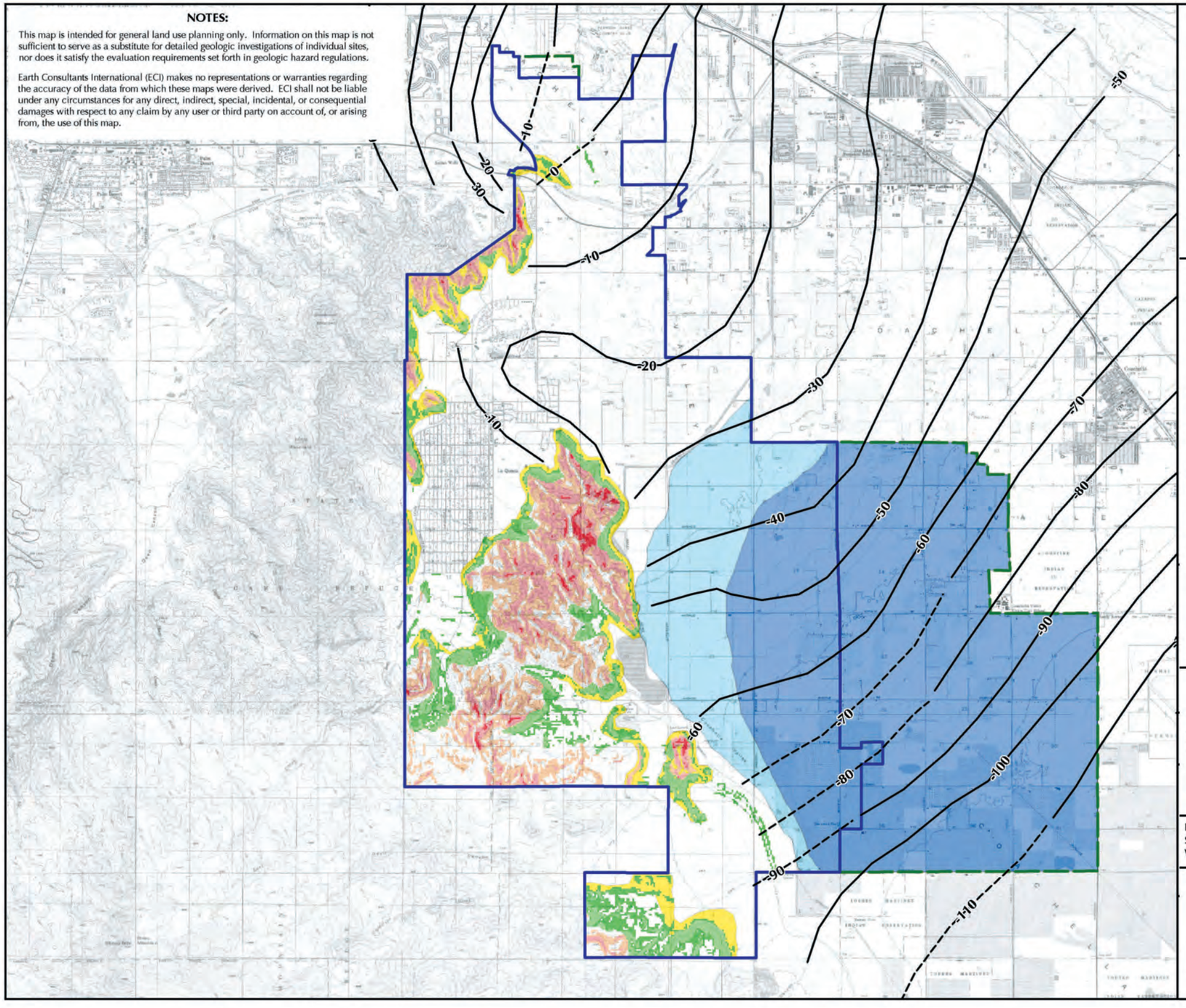

Legend

Seismic Hazards

Explanation

Earthquake-Induced Slope Instability

- Very High
- High
- Moderate
- Soil Block Slides
- Soil Slumps
- Rock Falls

Liquefaction Susceptibility

- High (areas underlain by youthful, unconsolidated sediments, and historically shallow groundwater within 30 feet of ground surface)
- Moderate (areas underlain by youthful, unconsolidated sediments, and historically shallow groundwater 30 to 50 feet below the ground surface)
- Groundwater Elevation per DWR 1964
- La Quinta City Boundary
- La Quinta Sphere of Influence

N W E S

6000 0 6000
Feet
2000 0 2000
Meters

Scale: 1:72,000

Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997
Sources: Modified from Riverside County General Plan, Department of Water Resources Bulletin 108 (1964), and USGS 30m Digital Elevation Model

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City of La Quinta General Plan
Seismic Hazards Map
La Quinta, California

La Quinta 2035 GENERAL PLAN

Exhibit
IV-3

Seiche

Seiches are standing wave oscillations (sloshing) that occur in enclosed or partially enclosed water bodies of shallow to moderately shallow depth. Seiches may occur in reservoirs, lakes, ponds, and swimming pools. Seiche waves typically associated with seismic-induced ground shaking are less than 2 feet high, although seiches over 6.5 feet have been reported.

In the planning area, there are numerous lakes, ponds, and reservoirs that may be subject to seiches as a result of ground shaking. These include Lake Cahuilla, recharge basins in the southeastern portion of La Quinta, and smaller golf course lakes and detention basins. Potential damage may also occur from seiches in water storage reservoirs.

Regulatory Mitigation of Earthquake Hazards

The State of California enacted the Alquist-Priolo Earthquake Fault Zoning Act in 1972 to mitigate the hazard of fault rupture by prohibiting structures intended for human occupancy from being located across the trace of an active fault. It requires the State Geologist to define "Earthquake Fault Zones" along faults that show evidence of active surface displacement. The Act prohibits local jurisdictions from granting development permits for certain types of development on sites within an Earthquake Fault Zone until a geologic investigation demonstrates they are safe from surface displacements from future faulting.

There are no Alquist-Priolo zoned faults in the City of La Quinta or its Sphere of Influence. The closest zoned fault is the San Andreas fault to the north of the city (also please see **Exhibit IV-2**, Faults and Historical Seismicity Map).

The State enacted the Seismic Hazards Mapping Act (SHMA) in 1990. It addresses non-surface earthquake hazards such as strong ground shaking, liquefaction and seismically induced landslides. It is intended to minimize loss of life and property by identifying and mitigating seismic hazards. The California Geological Survey (CGS) is primarily responsible for its implementation. CGS is required to provide local governments with seismic hazard zone maps that identify areas subject to liquefaction, earthquake-induced landslides and other ground failures, also known as "zones of required investigation." When construction projects fall within these areas, site-specific geological hazard investigations are required by the SHMA.

There are currently no State-issued, official seismic hazard zone maps for La Quinta or its Sphere.

The Seismic Retrofitting and Unreinforced Masonry Law was enacted by the State in 1986, and requires all cities and counties in zones designated as Seismic Zone 4 to identify potentially hazardous unreinforced masonry (URM) buildings in their jurisdictions.

In 2006, the City inventoried URMs and reported there were seven historic URMs in the City. Of these, five have been retrofitted in compliance with the City's mandatory mitigation program. One was to be demolished, and one had neither been mitigated nor showed progress towards mitigation. Both are adobe structures located on the grounds of the La Quinta Resort. The City Building Department has reported that the unmitigated URMs are vacant and are not being used.

Soils

There are seven types of soil units that have been mapped in the planning area:

1. Alluvial sand and gravel of the Whitewater River (Qg)
2. Windblown sand (wind-lain dune sand) (Qs)
3. Interbedded lacustrine (clay of valley areas) (Ql)
4. Alluvial deposits (sand of valley areas) (Qa)
5. Alluvial fan sand and gravel deposits (Qf)
6. Landslide deposits (Qls)
7. Quartz diorite (hard crystalline rock) (Qd)

The locations of these soils in the planning area are shown on Exhibit IV-4, Geologic Map of the Study Area.

NOTES:

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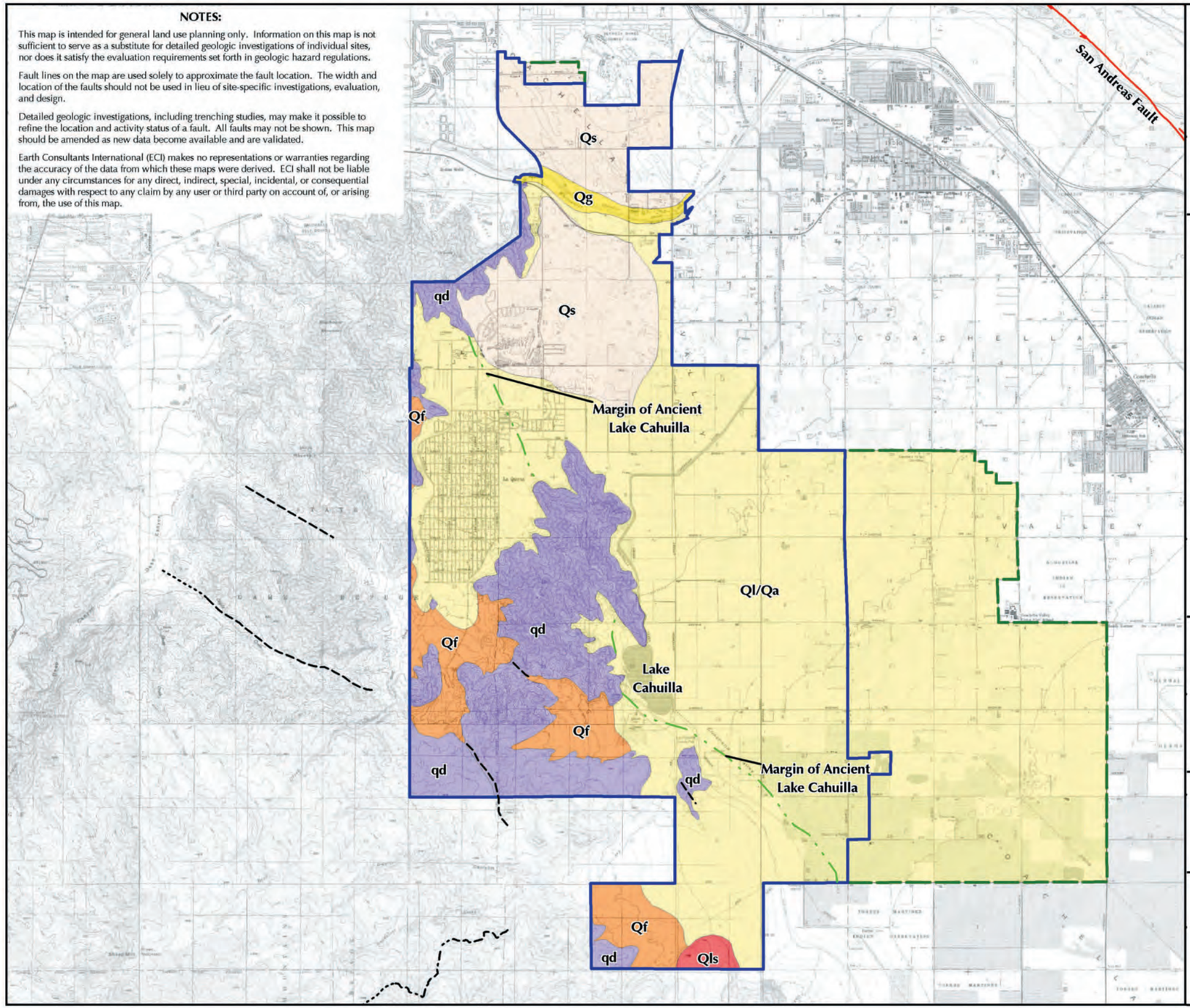

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Geologic Map

Geologic Unit Descriptions

Qg	Alluvial sand and gravel of Whitewater River	Qs	Wind-laid dune sand
Ql/Qa	Alluvial sand and clay of valley areas	Qls	Landslide
Qf	Alluvial fan sand and gravel	Qd	Quartz diorite

Symbols

- Active Fault; solid where well located, dashed where approximately located, dotted where concealed or inferred.
- Bedrock (not active) Fault; dashed where approximately located, dotted where concealed or inferred. (See Plate 1-1 for additional information).
- Geologic Contact
- La Quinta City Boundary
- La Quinta Sphere of Influence

N, W, E, S

6000 0 6000 Feet

2000 0 2000 Meters

Scale: 1:72,000

Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997.
Sources: Modified from Dibblee (2008); Rogers (1965), and Matti and others (1983).

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Hazards Associated with Soils

Landslides and Slope Instability
Slope failure can occur on steep slopes, and development at their base is at risk of landslides, surficial failures, soil slip, debris flow, and/or rockfall.

The planning area includes significant areas of hillside terrain, such as those associated with the Santa Rosa National Monument. Areas subject to these hazards include many of the more developed areas in the City, which are surrounded on three sides by mountains that pose rockfall hazard. Earthquakes, periods of intense rainfall, or human activities associated with construction, such as grading and blasting, can increase these hazards.

Compressible Soils
Compressible soils are geologically young, unconsolidated soils of low density that tend to compress under the weight of proposed fill embankments and structures.

In the General Plan area, areas most likely to contain compressible soils include:

- Valley areas, which include young soil deposits associated with modern and pre-historic floodplains, including the Whitewater River, which are overlain with wind-blown deposits and alluvium;
- Hillside areas, especially at the base of natural slopes, and within canyon bottoms and swales;
- Deep fill embankments, normally those more than about 60 feet deep, which may compress under their own weight.

Collapsible Soils
Collapsible soils are associated with sediments that have recently accumulated in arid or semi-arid environments, including soils commonly associated with alluvial fan and debris flow sediments deposited during flash floods, which are typically dry and contain tiny voids. Under some conditions, significant settlement can occur rapidly, even under relatively light loads. Irrigation, especially near building foundations, or a rise in the groundwater table can lead to differential settlement of buildings or structures, causing walls and foundations to crack.

In the General Plan area, this hazard may pose a localized risk where young alluvial and wind-deposited sediments occur. The La Quinta Engineering Department has prepared a bulletin (available on the City's website) that identifies portions of the General Plan area that are susceptible to collapsible soils. The bulletin establishes supplemental guidance for preparing site-specific geotechnical reports as they pertain to collapsible soils.

Expansive Soils

Expansive soils are soils containing fine-grained materials such as silts and clays in varying amounts. With changes in moisture content, clay minerals can shrink or swell, creating pressure that may affect structures or other surface improvements.

In the General Plan area, soils on the valley floor include alluvial sand and gravel with fine-grained lakebed deposits such as silts and clays. Once graded, the expansion characteristics of these soils can vary widely. Engineered fills that include expansive soils near the finished surface may result in damage.

Corrosive Soils

Corrosive soils occur as a result of various complex electrochemical and bacteriological processes between soil and buried metallic structures, such as water mains or elements within building foundations. Reactions depend on a variety of factors, including structure type and soil characteristics. Valley areas may contain sediments that are corrosive to metallic objects, such as reinforcing steel and pipelines.

Ground Subsidence

Subsidence is generally caused by human activity, such as the extraction of groundwater, oil or gas in sediment-filled valleys and floodplains. Natural forces, such as earthquake movements, can also result in subsidence.

Regional subsidence can result in earth fissures, sinkholes or depressions, and surface drainage disruption. It can cause damage to pipelines, canals, levees, wells, buildings, roadways and railroads and other improvements.

In the presence of clay and silt, removal of groundwater can cause irreversible subsidence and surface fissures and cracks. The only recorded fissures in the Coachella Valley occurred in La Quinta in 1948, near the base of the Santa Rosa Mountains, at the south end of the

City. Fissures and differential displacement are more likely to occur at the edge of the Valley floor, where it meets the mountains.

Monitoring conducted by the US Geological Survey (USGS), CVWD and others shows that subsidence rates in the Coachella Valley have been increasing rapidly over the past several decades. CVWD has implemented a variety of measures, such as groundwater recharge, imported water, and water conservation techniques and programs to minimize the extraction of groundwater.

Erosion

Erosion is influenced by a variety of factors: climate, topography, soil and rock types, and vegetation. During intense storms, high rates of erosion can occur as soil and rock in the foothills travel to the valley floor. Risk of erosion is increased by wildfires, which strip slopes of vegetation and leave them susceptible to erosion. In the planning area, canyon bottoms and areas within the valley that contain unconsolidated soils are most vulnerable.

Human activities hasten natural erosion, as they remove protective vegetation, alter natural drainage patterns, and compact soils. Cut and fill slopes may be more susceptible than naturalized slopes. Development also reduces the surface area available for water to percolate, thereby increasing risk of flooding and downstream sedimentation.

In La Quinta and Riverside County, development plans for new projects must incorporate temporary and permanent erosion control measures. All development projects over one acre in size must obtain coverage under the City's General Construction permit, which includes preparation of a Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMPs) for pre-, during and post-construction erosion prevention and control.

Wind Erosion

Wind transports and re-deposits soil, thereby damaging land and natural vegetation. Wind erosion commonly occurs in areas that are flat and bare, dry and sandy, or in areas with loose, dry, finely granulated soil. Effects of wind

erosion include soil loss and the deterioration of soil structure, dryness, loss of nutrients and productivity, air pollution, and sediment transport and deposition.

Many areas in the Coachella Valley are subject to varying levels of hazards associated with wind-blown sand. A variety of conditions that are conducive to creating and transporting sand exist in the valley, including the orientation of hill and mountain masses, nature of the bedrock, location of the Whitewater River floodplain, slope and orientation of the valley floor, and the hot, arid climate and sparse vegetation.

Wind and wind-blown sand can result in damage to structures and cars, poor visibility, road closures, and general degradation of air quality. Health problems associated with wind and blowing sand include allergies and respiratory irritation, eye infections, and skin disorders. The Coachella Valley region is particularly affected by particulate matter less than 10 microns in diameter, known as PM_{10}, that can directly irritate lung tissues and result in serious health problems. The Coachella Valley State Implementation Plan (adopted 2003) has been effective in reducing the concentration of PM_{10} in the valley. (Please refer to the Air Quality Element for more information on PM_{10}.)

Except for protected areas near the base of the Santa Rosa Mountains, most of the planning area is located within an active Wind Erosion Zone. Sediments subject to erosion underlie the northern portion of the City. Please see Exhibit IV-5, Wind Erosion Susceptibility Map.

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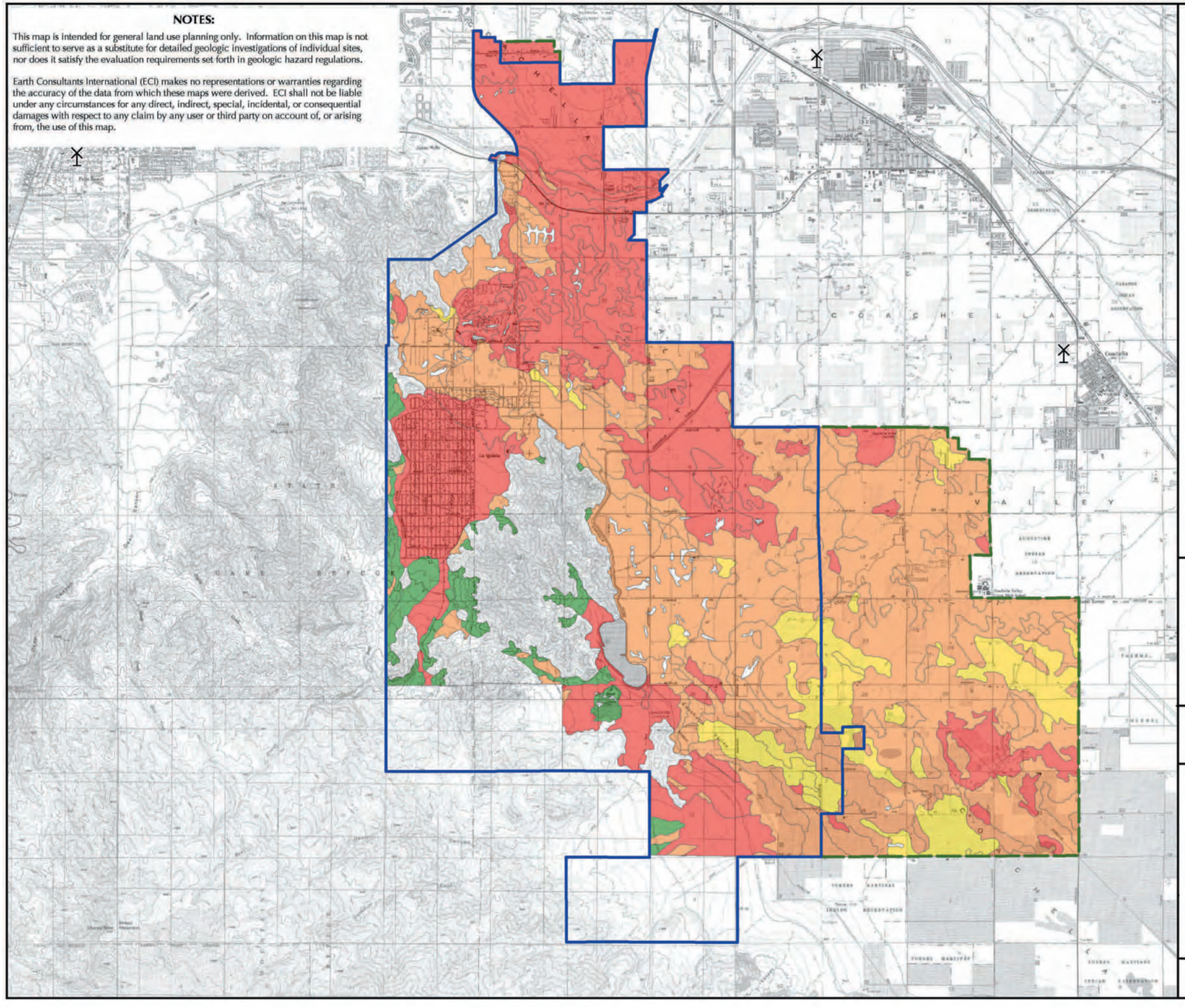

Legend

Wind Erodibility Rating

- Very high
- High
- Moderate
- Low
- Not rated or not available

- Weather Station
- La Quinta City Boundary
- La Quinta Sphere of Influence

N W E S

6000 0 6000
Feet

2000 0 2000
Meters

Scale: 1:72,000

Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997.
Source: modified from Natural Resources Conservation Service Wind Erodibiity Group - Riverside County, Coachella Valley Area.

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City of La Quinta General Plan
Wind Erosion Susceptibility Map
La Quinta, California

La Quinta 2035 GENERAL PLAN

Exhibit
IV-5

PLANNING FOR THE FUTURE

Local seismic and geotechnical conditions will continue to necessitate careful land use planning to protect the health and safety of residents and their property. The implementation and enforcement of regulations and guidelines such as the Alquist-Priolo Earthquake Fault Zoning act, CEQA Statutes and Guidelines, California Building Code, City zoning ordinance, and other applicable legislation will help manage hazards discussed in this Element.

As development in the area continues to occur, it will be increasingly important for the City to closely coordinate with state, regional and county agencies to update information databases of geotechnical and seismic conditions in the region. Through the development review process, the City must ensure that development proposals are subject to comprehensive geotechnical and safety assessments prior to approval, and that all necessary mitigation measures are implemented.

Public education will continue to be an important means to inform residents on how to reduce potential losses from geotechnical hazards while preparing for possible future disaster scenarios.

GOALS, POLICIES AND PROGRAMS

GOAL GEO-1

Protection of the residents' health and safety, and of their property, from geologic and seismic hazards.

❖ Policy GEO-1.1

The City shall maintain and periodically update an information database and maps that identify local and regional geologic and seismic conditions.

- *Program GEO-1.1.a:* The City shall periodically confer with the California Division of Mines and Geology, Riverside County, neighboring communities, and other appropriate agencies to improve and routinely update the database.

❖ *Policy GEO-1.2*

The City shall continue to require that development in areas subject to rockfall, landslide, liquefaction and/or other geotechnical hazards described in this Element, prepare detailed geotechnical analyses that

include mitigation measures intended to reduce potential hazards to less than significant levels.

❖ Policy GEO-1.3

The City shall require that development in areas subject to collapsible or expansive soils conduct soil sampling and laboratory testing and implement mitigation measures that minimize such hazards.

- *Program GEO-1.3.a:* The Building and Safety Department shall review and determine the adequacy of soils and/or other geotechnical studies conducted for proposed projects and enforce the implementation of mitigation measures.

❖ Policy GEO-1.4

The City shall require that all new structures be built in accordance with the latest adopted version of the Building Code.

❖ Policy GEO-1.5

The City shall continue to require that structures that pose a safety threat due to inadequate seismic design are retrofitted or removed from use, according to law.

❖ Policy GEO-1.6

The City shall coordinate and cooperate with public and quasi-public agencies to ensure that major utilities continue to be functional in the event of a major earthquake.

- *Program GEO-1.6.a:* The City shall maintain working relationships and strategies between the Public Works Department, utility providers, and other appropriate agencies to strengthen or relocate utility facilities and take other appropriate measures to safeguard major utility distribution systems.

RELATED GOALS

As described above, this Element relates to others in this General Plan. The following Goals, and their associated policies and programs, are closely related to those of this Element.

GOAL FH-1: Protection of the health, safety and welfare of the community from flooding and hydrological hazards.

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La Quinta
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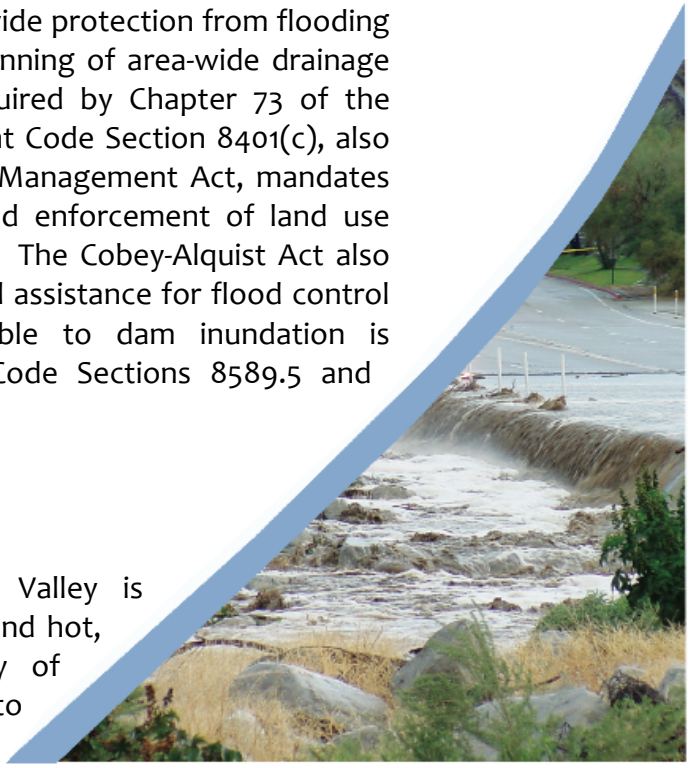
FLOODING AND HYDROLOGY

PURPOSE

The Flooding and Hydrology Element describes potential drainage and flooding hazards in the City and its Sphere of Influence, as well as the future potential for major flooding.

Other General Plan elements are related to Flooding and Hydrology. The Soils and Geology Element is the most closely related, as the City's flooding patterns are controlled by its soils and geology. Other related elements include Hazardous Materials and Circulation. The Land Use Element, by which land uses such as open space, developed areas, and essential public facilities, are designated and located is also affected by flooding issues.

There are a number of State regulations and policies that require the City and local and regional agencies (including the Coachella Valley Water District and Riverside County Flood Control and Water Conservation District) to analyze and provide protection from flooding hazards in the community. The joint planning of area-wide drainage plans affecting local jurisdictions is required by Chapter 73 of the Statutes of California (1939). Government Code Section 8401(c), also known as the Cobey-Alquist Flood Plain Management Act, mandates local government planning, adoption and enforcement of land use regulations for flood plain management. The Cobey-Alquist Act also sets forth requirements for state financial assistance for flood control measures. Mapping of areas susceptible to dam inundation is established by California Government Code Sections 8589.5 and 65302(g).



BACKGROUND

The desert climate of the Coachella Valley is generally characterized by mild winters and hot, dry summers. However, the proximity of mountain ranges, including the San Jacinto and Santa Rosa Mountains, and

associated climatic zones affect regional conditions. Flooding can result from rapid melting of mountain snowpack, as well as occasional intense thunderstorms. The latter occur most frequently during the winter months, between November and April, but may also happen as monsoon storms during the summer and early fall (July through September). Storms are generally of short duration but may result in several inches of rainfall in localized areas.

Surrounding mountains average over 25 inches annually, as compared with 3 inches in the Valley, including the La Quinta planning area. Even when the Valley does not receive rain, runoff from mountain slopes can cause flooding, as well as mud and debris flows. Rapid rainfall can quickly saturate dry soils, impeding percolation and increasing runoff.

Hydrological Conditions and Flood Hazards

The valley floor is comprised of a broad, gently sloping basin formed by alluvial fans which have been created from the deeply chiseled mountain canyons of the Santa Rosa Mountains, the Whitewater River floodplain, and sediments of prehistoric lakes. Much of the development in the City and its Sphere occurs on the valley floor, including that portion which lies along the base of the Santa Rosa Mountains in the western portion of the City.

Flooding is a recurring, natural event. Floodplains are meant to carry excess waters during flooding. Floodplains can also be useful for a variety of human uses, such as agriculture and water supply. However, flooding becomes a hazard when man-made structures encroach into floodplains. Worldwide, floods are among the most destructive and costly of all natural disasters, resulting in more deaths per year than any other geologic hazard.

There are two primary classifications of flooding that occur in the planning area: flash floods that occur along natural or man-made channels, and sheet flooding across the valley floor. Flash floods are brief but result in high water volumes and velocities. Because mountain slopes are comprised of impervious rock, little percolation occurs, and waters collect and flow rapidly into channels on the valley floor. These flows can convey large amounts of debris including mud, sand and rock.

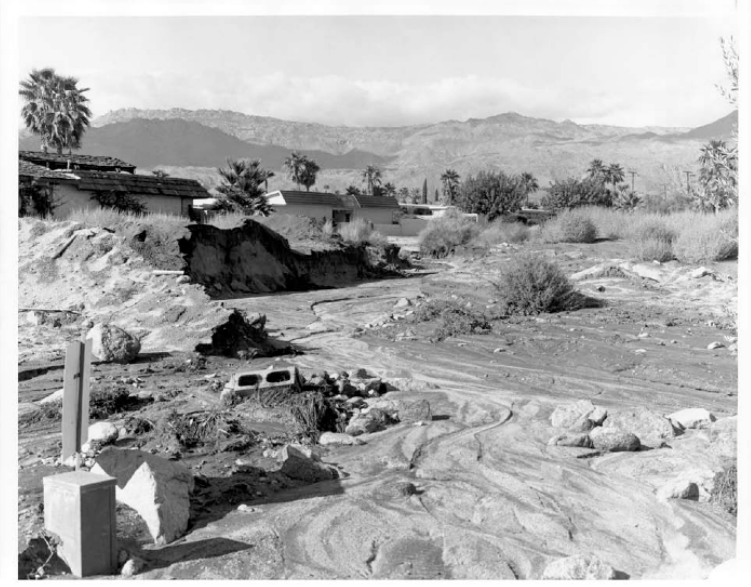
When either flood control channels do not exist, an existing channel's capacity is exceeded, or channels are impacted by debris or structures, storm waters travel across the valley floor, creating the condition known as sheet flow.

Buildings, sidewalks, parking lots, and roadways reduce the area available for natural infiltration of storm water. Water that formerly would have been absorbed may run off if new development does not provide effective storm handling systems. Given that surrounding mountain slopes generally receive greater levels of rainfall, development downstream of canyons and at the base of mountains may be at particular risk.

Stream Flow and Flood Hazard

There are no perennial rivers or streams in La Quinta. Although well-defined in the mountains, on the valley floor most natural drainage channels disperse into braided, ephemeral streams and areas of sheet flow.

The Whitewater River is the main watercourse in the valley. It collects a watershed of more than 1,000 square miles, draining runoff from the San Bernardino, Little San Bernardino, San Jacinto and Santa Rosa Mountains. From its source near the San Gorgonio Pass, it flows southeasterly, ultimately ending at the Salton Sea. Throughout the City, the Whitewater is conveyed through a man-made channel known as the Coachella Valley Stormwater Channel.



Based on historical records collected by the Army Corps of Engineers, multiple large flood events occurred in the Whitewater River basin throughout the 1800s. There were also damaging floods throughout the 20th century, with more recent ones occurring in 1965, 1966, 1969, and 1976. The maximum flood of record occurred in 1965 in the lower Coachella Valley, where flood flows exceeded 10,000 cubic feet per second (cfs).

Flooding is typically defined in terms of the "100-year flood." The 100-year flood is the level of flood water expected to be equaled or exceeded every 100 years, on average. In other words, it has a one percent probability of occurring in a given year.

Seismically Induced Flooding

Flooding can occur when water retention and storage structures fail as a result of earthquakes. Such structures may include dams, levees, and above-ground water tanks.

Dam Failure

The California State Water Code, Division 3, contains safety statutes governing dams. The California Office of Emergency Services has determined that the City of La Quinta is not at risk from potential inundation from any existing dams.

Levee Failure

The Coachella Valley Stormwater Channel, the Coachella Canal and Lake Cahuilla are protected by levees. In the event of a severe earthquake, there is potential for lateral spreading of foundation soils. Lateral spreading is a condition where underlying soils move sideways as a result of strong ground shaking (also see Soils and Geology Element) and underlying soils becoming liquefied or fractured. Under these conditions, levee systems could sustain damage or fail entirely. While there are no existing engineering analyses demonstrating the potential inundation area of the Coachella Canal or Lake Cahuilla, complete failure of these levees would impact development directly downstream.

Portions of the Coachella Valley Stormwater Channel (Whitewater River) are concrete-lined and buried under sand for protection. These levees are subject to erosion as well as damage from strong ground shaking due to an earthquake. They are periodically maintained by CVWD. They are further discussed under Flood Control Measures, below. The portion of the Channel that passes through the City between Jefferson Street and Miles Avenue deviates from the natural watercourse. Based on flood insurance studies conducted by the Federal Emergency Management Agency (FEMA), there is potential for a "breakout" along this reach of the river during a 100-year storm. Such a breakout could result in 50% loss of channel capacity and flooding within a portion of the City's northeast Sphere-of-Influence, as well as in the cities of Indio and Coachella.

Seiching

Ground shaking during earthquakes can result in seiching, or water sloshing, in open bodies of water. Lake Cahuilla, local canals, above-ground storage tanks, detention basins, and even swimming pools may be subject to seiching during earthquakes. Seiching may cause water to overtop or damage containment structures, resulting in inundation of downslope development.

Failure of Above-Ground Storage Tanks

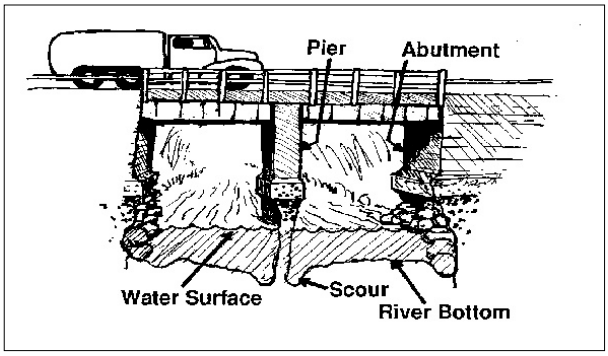
Strong ground shaking can cause structural damage to above-ground water storage tanks, particularly where tanks are not adequately braced and baffled. Pipes leading to the tank may be sheared off and water released. The 1992 Big Bear and 1994 Northridge earthquakes led to revised design standards for steel water tanks, which now utilize flexible joints at connection points to allow for movement in all directions.

Hazards associated with damage to water tanks include inundation of structures down-slope and reduction of potable water supplies for emergency services, such as fire protection. Therefore, evaluating and retrofitting tanks to ensure their structural reliability in the event of an earthquake is crucial. Water supplies in reservoirs should also be kept at or near capacity.

The Coachella Valley Water District (CVWD) reports that there are ten water reservoirs in La Quinta with a total capacity of 44.3 million gallons. All are constructed of welded steel to current seismic standards, as well as those established by the American Water Works Association.

Bridge Scour

Scour occurs along roadway and railroad bridges when erosion occurs and undermines foundation supports such as abutments or piers. In California, this condition is addressed through a seismic retrofit program that includes inspection of bridge underpinnings. Washington Street and Jefferson Street are the two main Whitewater River crossings in the City; these are all-weather crossings. Additionally, construction of the Adams Street bridge over the Whitewater River began in 2011 and is



expected to be completed in late 2013. This will provide a third all-weather crossing over the channel.

Across the La Quinta Evacuation Channel, the Eisenhower Drive and Washington Street crossings are all-weather flood channel crossings. During and after flooding, the City inspects these crossings for scour damage.

There are also three crossings over the Coachella Branch of the All-American Canal, which is used for irrigation purposes. These occur at Avenue 50, Avenue 52, and Jefferson Street south of Avenue 52. The Coachella Valley Water District (CVWD) strictly manages flows through the canal, and it is not used as a flood control mechanism. These crossings are expected to remain passable during storm events; however, they should be inspected periodically.

Regional Stormwater Management

The Riverside County Flood Control and Water Conservation District (RCFC) is responsible for analysis and design of regional flood control structures. Regional facilities are those that collect runoff from areas outside the City, including surrounding mountains, and are managed by the Coachella Valley Water District (CVWD). CVWD is empowered with broad flood control management responsibilities, which include planning, maintenance and construction of improvements for regional facilities. In the planning area, regional facilities include the Coachella Valley Stormwater Channel (Whitewater River), the La Quinta Evacuation Channel, the Bear Creek System, the East La Quinta Channel and Lake Cahuilla.

Local Drainage Management

The City is responsible for maintenance of local facilities, which collect and convey runoff from local streets and properties to regional channels and basins. The City has recently updated its Master Drainage Plan, which describes existing and planned local facilities. The City utilizes it to manage and document the location and condition of existing stormwater management facilities. It has also been used to obtain FEMA Letters of Map Revision for some flood areas.

Flood Control Facilities

The following describes major flood control facilities in the planning area. The locations of these facilities are shown on Exhibit IV-6, FEMA Flood Zones and Flood Control Facilities.

Whitewater River/Coachella Valley Stormwater Channel

As previously discussed, the Coachella Valley Stormwater Channel is the principal drainage course in the City. Although typically dry, it may become inundated during storm events. The Channel extends approximately 50 miles with an average cross section of 260 feet. It is unlined in most locations, and portions of it are protected by levees. This watercourse generally follows the recent historical natural river path, although as noted above, it deviates from this path through a portion of the City.

Levees along the stormwater channel are FEMA-classified as "Provisionally Accredited Levees," which indicates they provide protection from the 100-year flood. CVWD was required to submit documentation demonstrating the protection capabilities of these levees to comply with requirements of Section 65.10 of National Flood Insurance Program (NFIP) regulations (Title 44, Chapter 1 of the Code of Federal Regulations). CVWD met this requirement.

Bear Creek System

The Upper Bear Creek System is designed to manage runoff from the Santa Rosa Mountains. The system is located along the southerly and westerly edges of the Cove and includes the Upper Bear Creek Training Dike, Upper Bear Creek Detention Basin, Bear Creek, and Bear Creek Channel. Runoff from a 1.7 square mile drainage area is diverted by the dike, which directs it along Bear Creek to the detention basin. The Basin has a storage capacity of 752 acre-feet. Outflows enter the Bear Creek Channel, an approximately 2.5-mile long channel with capacity to convey the 100-year flood. Smaller canyons also drain into the channel. Channel flows continue downstream into the La Quinta Evacuation Channel, ultimately discharging into the Coachella Valley Stormwater Channel. The City has applied to FEMA for accreditation of the training dike and is awaiting receipt of the formal accreditation letter.

East La Quinta System

This system is located along the southeastern edge of the Cove and is intended to collect drainage from hills east and south of Calle Bermudas. The system is comprised of the East La Quinta Channel and several detention basins. Flows are carried to the La Quinta Evacuation Channel.

La Quinta Evacuation Channel

The La Quinta Evacuation Channel extends approximately 3.5 miles northeasterly from the Bear Creek Channel, through developed areas of the City, to the Coachella Valley Stormwater Channel. It is primarily intended to capture and transport stormwater from various flood control systems in the City.

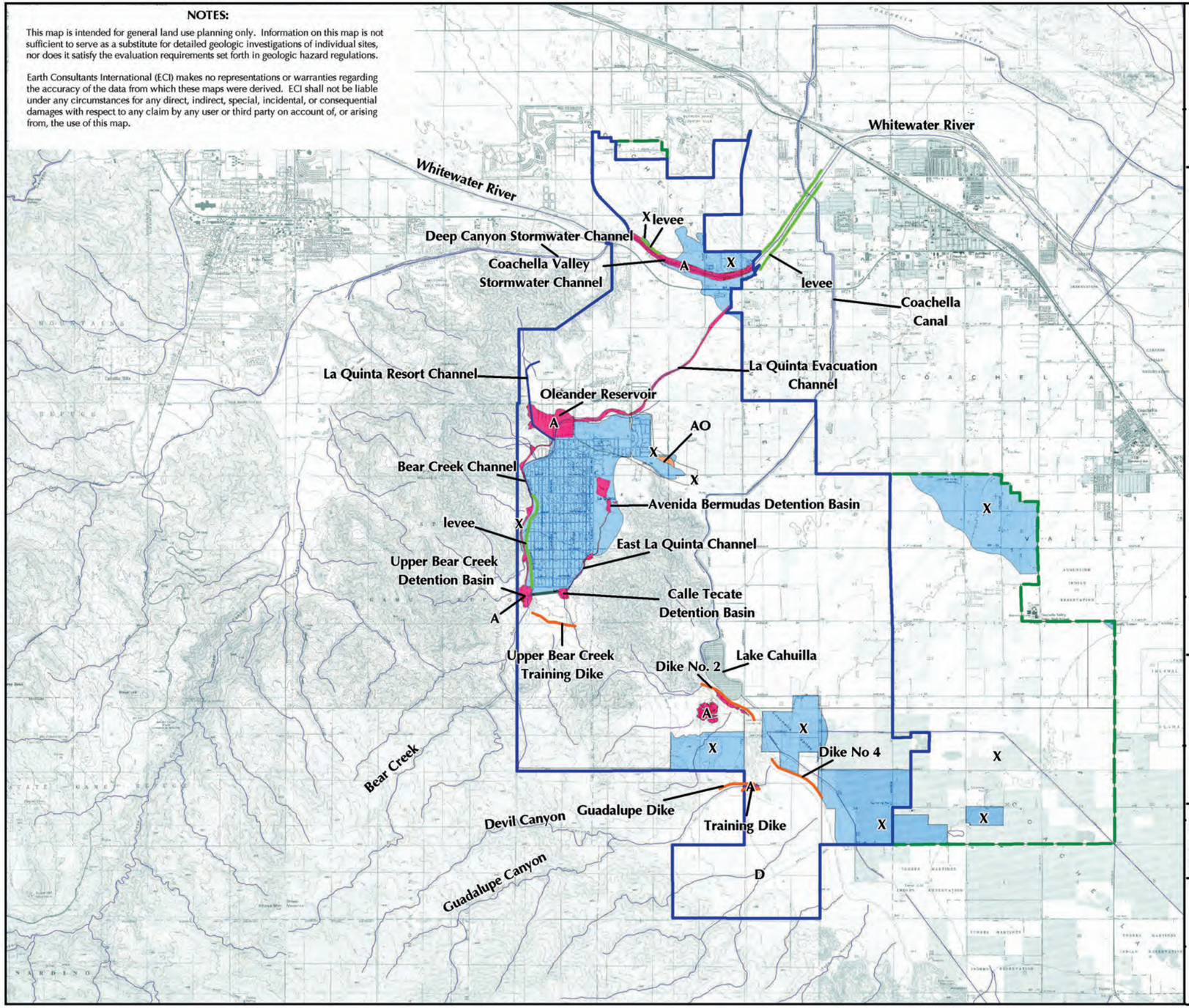
Dikes

In addition to the Bear Creek Training Dike, there are several other dikes located near the base of mountains in the City. These have been constructed to protect developed areas from runoff from mountain slopes, and include three dikes constructed by the Bureau of Reclamation: the Eastside Dike, constructed to protect the Coachella Branch of the All-American Canal; and Dike 2 and Dike 4, which total 5.2 miles south and southeast of Lake Cahuilla, respectively, and were built to protect Lake Cahuilla and lands between Avenue 58 and Avenue 66. Dike 4 is accredited by FEMA; Dike 2 is not yet accredited.

NOTES:

This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations.

Earth Consultants International (ECI) makes no representations or warranties regarding the accuracy of the data from which these maps were derived. ECI shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of this map.



Legend

FEMA Flood Zones and Flood Control Facilities

Explanation

High Risk Areas

A — Zone that corresponds to the 100-year flood areas, as determined by approximate methods. Because detailed hydraulic analyses were not performed, no base flood elevations or depths are shown. Mandatory flood insurance is required.

AO — Zone that corresponds to 100-year shallow flood areas where average depths are between 1 and 3 feet (usually from sheet flow on sloping terrain).* Mandatory flood insurance is required.

Moderate and Low Risk Areas

X — Zone that corresponds to areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. No base flood elevations or depths are shown. Flood insurance is available but not required.

X — Zone that corresponds to areas outside of the 500-year flood. No base flood elevations or depths are shown. Flood insurance is available but not required.

Undetermined Risk Areas

D — Zone that corresponds to unstudied areas where flood hazards are undetermined, but flooding is possible. Flood insurance is available but not required.

- Dike
- Levee
- River or stream
- La Quinta City Boundary
- La Quinta Sphere of Influence

* For elevations or depths see original FEMA Flood Insurance Rate Maps available at the City, County, or www.fema.gov.

N W E S

Scale: 1:84,000

7000 0 7000 Feet

2 0 2 Kilometers

Base Map: USGS Topographic Map from Sure!MAPS RASTER, 1997
Source: Federal Emergency Management Agency, San Bernardino, Flood Insurance Rate Map (Panel Numbers: 06065C2229G, 06065C2241G, 06065C2243G, 06065C2231G, 06065C2232G, 06065C2233G, 06065C2234G, 06065C2237G, 06065C2239G, 06065C2244G, 06065C2261G, 06065C2900G)

Earth Consultants International

Project Number: 3004
Date: 2010

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TERRA NOVA® Planning & Research, Inc.

City of La Quinta General Plan
FEMA Flood Zones and Flood Control Facilities
La Quinta, California

Exhibit
IV-6

Flood Hazard Mapping

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 require that the Federal Emergency Management Agency (FEMA) evaluate flood hazards and provide affordable flood insurance to residents of communities where future floodplain development is regulated. To determine the need for and availability of federal flood insurance, FEMA has developed Flood Insurance Rate Maps (FIRMs) for many areas in the United States. The Floodplain Administrator for the City of La Quinta is the City Engineer.

Data compiled for La Quinta and its Sphere of Influence are shown on Exhibit IV-6. Applicable flood zones, as shown on this map, include:

- Zone A: Areas of 100-year flood where no base flood elevations or depths are shown. Requires flood insurance.
- Zone AO: Areas of 100-year flood with average depths of 1 – 3 feet, generally from sheet flow on sloping terrain. Requires flood insurance.
- Zone X: Areas of 500-year flood with average depth of less than 1 foot or less than one square mile drainage area; and protected by levees from 100-year flood. No base flood elevations or depths are shown. Flood insurance available, but not required.
- Zone D: Areas where flood hazards are undetermined but flooding is possible. Flood insurance available, but not required.

As shown on the map, areas within the planning area that are within the 100-year flood plain (Zones A or AO) include the Coachella Valley Stormwater Channel, the La Quinta Evacuation Channel, Bear Creek Channel, and detention basins. Portions of the area north and south of the Coachella Valley Stormwater Channel, the entire Cove area, several areas south and southeast of Lake Cahuilla, and a portion of the City's eastern Sphere of Influence are within Zone X.

Land Use Planning as a Flood Control Strategy

One of the most effective and direct means of controlling flooding and protecting lives and property is through land use planning. This may include designing flood control structures so that stream courses are left in a naturalized state or developed as open space for parks or golf courses.

Portions of the planning area are mapped within the 100-year floodplain. Others may be subject to sheet flow where natural channels emanating from mountain streams and canyons lose definition on the valley floor. Restricting the type and location of structures near major drainages can limit exposure of people,

structures and other improvements to flood hazards and reduce potential losses. Development should be strictly limited within 100-year floodplains to uses that do provide for human habitation. No critical facilities should be located within floodplains.

Other Flood Control Measures

The Clean Water Act (CWA) was enacted in 1972 and was intended to set goals for restoring and maintaining water quality through reduction of point-source pollution by industry and sewage treatment facilities. A 1987 amendment further required that states reduce runoff into waterways. The National Pollutant Discharge Elimination System (NPDES) implements these requirements by mandating the adoption of stormwater management plans and programs to reduce runoff of pollutants in storm water systems into waters of the United States.

In California, the NPDES is administered by the State Regional Water Quality Control Board, which issues NPDES permits to local jurisdictions. In Riverside County, the NPDES is a joint permit system among the Riverside County Flood Control and Water Conservation District (RCFC), Riverside County, CVWD, and all Riverside County cities, including La Quinta.

PLANNING FOR THE FUTURE

The City of La Quinta, Riverside County, and the Coachella Valley Water District have worked closely together to proactively plan for and protect developed areas from significant flooding. Development within 100-year floodplains is limited to flood control channels, detention or retention basins, and golf courses that dually serve as retention basins.

New flood control facilities should be designed to protect other environmental resources and retain watercourses in a natural state or for use as open space, whenever feasible.

Some areas of the City are still subject to localized flooding. These hazards should be addressed through the continued enforcement of requirements for on-site retention facilities.

FEMA mapping also shows areas that are considered subject to flooding from storms stronger than the 100-year storm. Moderate flood hazards are also mapped within undeveloped areas, particularly in the Sphere of Influence. However, in some portions of the General Plan area, some study areas are limited, and flood zone mapping is incomplete. As a result, there are some areas outside of the mapped flood zones that are likely to be subject to flooding. The City should

coordinate with FEMA and other agencies for more complete mapping to define flooding hazards.

Seismic hazards could place storage tanks, lakes, detention basins, levees, dikes or other water storage or retention facilities at risk. Future planning for new development should consider the potential for flooding and continue to limit or prohibit structures in areas subject to the 100-year storm.

GOALS, POLICIES AND PROGRAMS

GOAL FH-1

Protection of the health, safety and welfare of the community from flooding and hydrological hazards.

❖ Policy FH-1.1

The City shall monitor and update its 2009 Master Drainage Plan every 5 years, or as needed, to reflect changes in local and regional drainage and flood conditions.

❖ Policy FH-1.2

The City shall coordinate efforts to update floodplain mapping in all areas of the City, particularly those where potential flood impacts are not yet known.

- *Program FH-1.2.a:* The City shall coordinate and cooperate with CVWD in the filing of FEMA applications to amend the Flood Insurance Rate Maps, as necessary.

❖ Policy FH-1.3

The City shall continue to implement development standards that provide for a reduction in runoff from developed lands and are consistent with local and regional stormwater management plans.

- *Program FH-1.3.a:* New development shall continue to be required to construct on-site retention/detention basins and other necessary stormwater management facilities that are capable of managing 100-year stormwater flows.

❖ Policy FH-1.4

The City shall coordinate with CVWD regarding the implementation of measures which protect bridge crossings from the scouring and erosive effects of flooding.

- *Program FH-1.4.a:* The Public Works Department will work with CVWD to inspect bridge crossings for scour damage during and after significant flooding events.

- *Program FH-1.4.b:* The City shall coordinate with the appropriate state agencies to participate in the state's bridge scour inventory and evaluation program.

❖ Policy FH-1.5

The City shall coordinate with CVWD to minimize the potential for the occurrence of inundation from levee or water tank failure, including seismically induced inundation.

- *Program FH-1.5.a:* The City shall annually request a status update from the Coachella Valley Water District of their monitoring of the structural safety of the levees around Lake Cahuilla and along the Coachella Valley Stormwater Channel and the La Quinta Evacuation Channel.

- *Program FH-1.5.b:* The City shall annually request a status update from the Coachella Valley Water District of their monitoring of the structural integrity of above-ground water tanks and reservoirs, and where needed, the implementation of bracing techniques to minimize potential structural damage and/or failure.

❖ Policy FH-1.6

Major drainage facilities, including debris basins, retention/detention basins, and flood control facilities shall provide for the enhancement of wildlife habitat and community open space to the greatest extent feasible, while still maintaining their functional qualities.

❖ Policy FH-1.7

New critical facilities shall not be constructed within the boundaries of the 100-year flood plain.

❖ Policy FH-1.8

Development within drainage areas and stormwater facilities shall be limited to recreational uses such as golf courses, lakes, sports or play fields, and similar uses.

❖ Policy FH-1.9

The City shall periodically monitor and update, as needed, evacuation routes to ensure safe ingress and egress for residents and emergency vehicles in the Cove and southern neighborhoods in the event of a major flood.

- *Program FH-1.9.a:* The City shall provide maps and other information concerning evacuation routes to residents of the Cove, Riverside County Fire Department, Sheriff's Department and other appropriate agencies.

RELATED GOALS

As described above, this Element relates to others in this General Plan. The following Goals, and their associated policies and programs, are closely related to those of this Element.

GOAL GEO-1: Protection of the residents' health and safety, and of their property, from geologic and seismic hazards.

GOAL WR-1: The efficient use and conservation of the City's water resources.

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La Quinta
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HAZARDOUS MATERIALS

PURPOSE

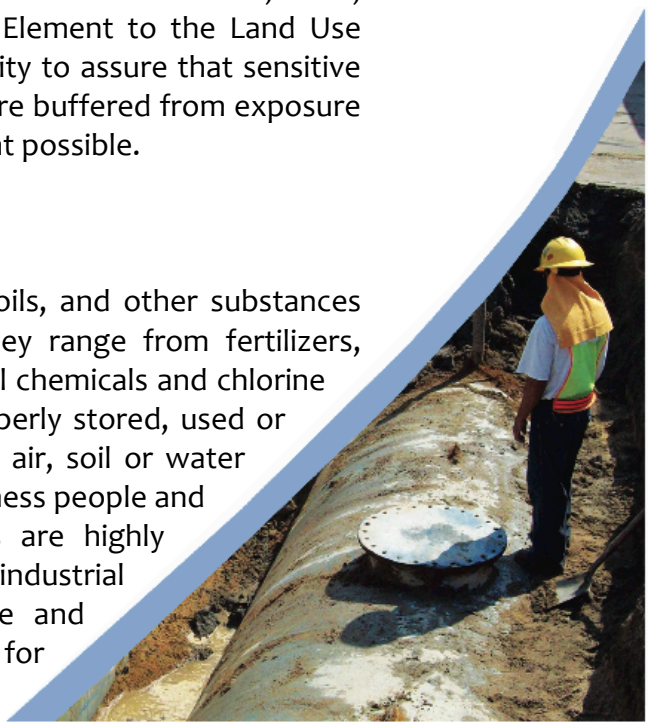
The Hazardous Materials Element addresses the potential hazards associated with the storage, use, and transport of hazardous materials in and through the City.

Public safety must be addressed in the General Plan, in conformance with California Government Code 65302(g). Hazardous materials represent one of the issues associated with public safety.

This Element is closely related to the Emergency Services Element. The City's first responders ensure public safety in the event of a hazardous materials spill or release. This response includes isolation, evacuation (if warranted), identification, containment and proper disposal of the hazardous materials, as well as proper notification to other agencies. It is also related to the other components of the Environmental Hazards Chapter – the Soils and Geology Element and the Flooding and Hydrology Element. Finally, the location of land uses which use, store, or transport hazardous materials ties this Element to the Land Use Element, insofar as it is important for the City to assure that sensitive land uses, such as residences and schools, are buffered from exposure to hazardous materials to the greatest extent possible.

BACKGROUND

Hazardous materials are those chemicals, oils, and other substances which have the potential to be toxic. They range from fertilizers, pesticides and automotive products, to pool chemicals and chlorine products. If hazardous materials are improperly stored, used or transported, they can be released into the air, soil or water and cause harm to the City's residents, business people and visitors. As a result, hazardous materials are highly regulated, particularly in commercial and industrial applications. A number of regional, State and federal agencies have responsibility for managing and regulating these materials.



At the federal level, the Environmental Protection Agency (EPA) has primary responsibility for the regulation of hazardous materials. The California Environmental Protection Agency and the Department of Toxic Substances Control are the primary State agencies which deal with hazardous materials. At the regional level, the Riverside County Department of Environmental Health monitors and regulates hazardous materials use and disposal throughout the County, including in the City and its Sphere of Influence. If contamination of a water source occurs, the Regional Water Quality Control Board has enforcement powers. The City's Emergency Services Division, Fire and Police Departments would be called upon in the event of a spill or similar emergency relating to hazardous materials within City limits (please see the Emergency Services Element for further discussion of emergency services).

In order to coordinate efforts relating to hazardous materials management, the County has developed a Hazardous Waste Management Plan (HWMP), which addresses the proper disposal, processing, handling, storage and treatment of hazardous materials. The City has also adopted the HWMP and implements it at the local level.

In the City, hazardous materials are limited to small quantity generators (those generating less than 1,000 kilograms of hazardous waste per month), ranging from individual households which store cleaning solutions and automotive products, to service stations and medical clinics, which may store or use larger quantities of hazardous materials.

Household hazardous waste can be disposed of properly through Household Hazardous Waste disposal events, or at a network of "ABOP" facilities operated by the County Waste Management Department. An ABOP – or Antifreeze, Batteries, Oil, Paint – facility is located in Palm Springs and is open regularly to accept these materials, as well as electronic waste. Household Hazardous Waste disposal events are held periodically at varying locations throughout the County, including cities in the Coachella Valley.

The most common commercial uses which use hazardous materials in the City are service stations, which not only use and store fuels and oils, but also operate underground storage tanks, which have the potential to contaminate soils and water supplies if not properly maintained. Other commercial users include dry cleaning operations,

pool cleaning or supply stores, and automotive supply stores. Commercial and industrial users are responsible for meeting the requirements of the County Department of Environmental Health. These requirements include the proper disposal of hazardous materials through a number of licensed contractors specializing in these materials.

In the event of a spill or leak of hazardous materials, initial response would be made by the closest fire engine company, followed by response from a dedicated Hazardous Material Response Team (HMRT). The Riverside County Fire Department operates a Hazardous Materials Team, which operates throughout the County and responds to incidents when necessary.

PLANNING FOR THE FUTURE

As the City and its Sphere of Influence build out, the number of hazardous materials storage and use locations is likely to increase. Further, the eastern edge of the Sphere occurs immediately adjacent to the Jacqueline Cochran Regional Airport, and commercially and industrially designated lands in that area may include businesses which store, use and transport airplane-related hazardous materials.

The City's continued participation in regional programs and coordination with County departments with responsibility for hazardous materials will be important in the future. The City's Emergency Services Division and City Hall facilities dedicated to emergency management will require expansion as population grows, to assure that the City can respond effectively to emergencies relating to hazardous materials.

GOALS, POLICIES AND PROGRAMS

GOAL HAZ-1

Protection of residents from the potential impacts of hazardous and toxic materials.

❖ Policy HAZ-1.1

The storage, transport, use and disposal of hazardous materials shall comply with all City, County, State and federal standards.

- *Program HAZ-1.1.a:* Continue to coordinate with all appropriate agencies to assure that local, State and federal regulations are enforced.

- *Program HAZ-1.1.b:* Development plans for projects which may store, use or transport hazardous materials shall continue to be routed to the Fire Department and the Department of Environmental Health for review.

- *Program HAZ-1.1.c:* The City's Emergency Services Division shall maintain a comprehensive inventory of all hazardous waste sites within the City, including underground fuel storage tanks.

❖ Policy HAZ-1.2

To the extent empowered, the City shall regulate the generation, delivery, use and storage of hazardous materials.

- *Program HAZ-1.2.a:* All facilities which produce, utilize, store or transport hazardous materials shall be constructed in strict conformance with all applicable Building and Fire Codes.

❖ Policy HAZ-1.3

Support Household Hazardous Waste disposal.

- *Program HAZ-1.3.a:* Continue to work with the County to assure regular household hazardous waste disposal events are held in and around the City.

- *Program HAZ-1.3.b:* Educate the City's residents on the proper disposal of household hazardous waste through the City's newsletter and by providing educational materials at City Hall.

RELATED GOALS

As described above, this Element relates to others in this General Plan. The following Goals, and their associated policies and programs, are closely related to those of this Element.

GOAL ES-1: An effective and comprehensive response to all emergency service needs.

GOAL PF-1: Public facilities and services that are available, adequate and convenient to all City residents.